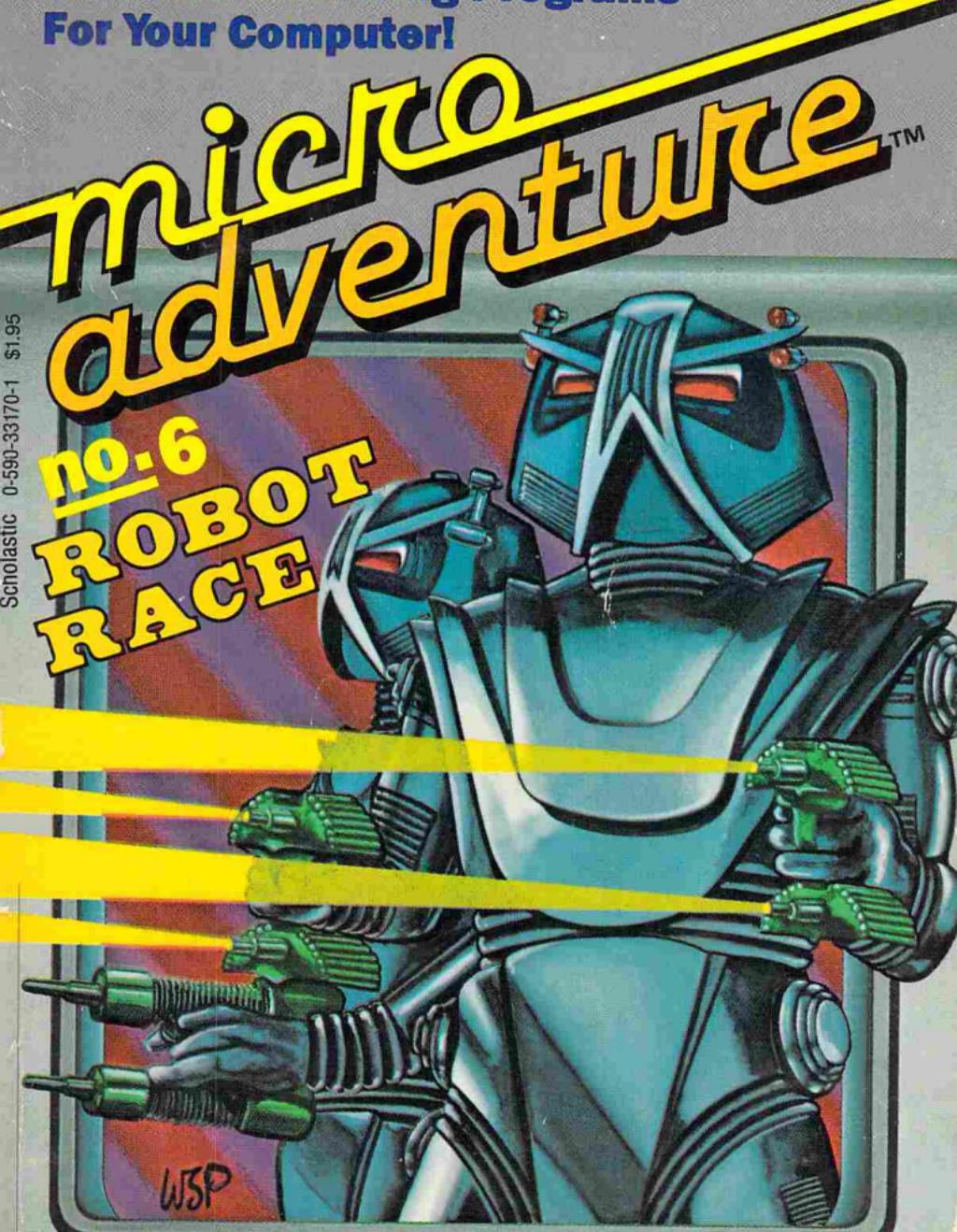


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MICRO ADVENTURE™

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# ROBOT RACE

by

**David Anthony Kraft**

Programming by Susan M. Zakar

A Parachute Press Book



SCHOLASTIC INC.

New York Toronto London Auckland Sydney Tokyo

Designed by Gene Siegel

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01

**Warning: The following information is crucial to the success of your mission. Read it carefully. It may save your life.**

As a certified member of ACT (the Adventure Connection Team), your job, as always, is to defend the cause of good against evil. It won't be easy, because BRUTE (the Bureau of Random Unlawful Terror and Evil), an international organization bent on wreaking havoc throughout the world, will be fighting you every step of the way. Your computer expertise will be vital to this mission. So turn on your home system. Throughout this adventure you'll be called upon to program it to get the ACT team out of some really tough spots.

Look for the chart next to the program instructions. It will tell you which micros will run each program. If the program won't run as is on your computer, consult the Reference Manual in the back of the book — fast! Good luck. This message will be erased from memory in 30 seconds.

---

## CHAPTER

# 1

---

It's a Saturday afternoon, and you're down at the corner arcade, playing video games.

"You're pretty good at Zaxxon," says a voice from behind you, a voice that somehow sounds familiar. "Let's see how you do at Phoenix."

You glance over your shoulder, and are surprised to see the stuffy-looking substitute teacher that you had for math class not too long ago. What's she doing in a video arcade, anyway? She looks totally out of place here.

Then you remember. She's the one who once slipped you a coded message from ACT while you were at school — a message that started you off on your time travel adventure!

**ZAP!**

While you were busy looking over your shoulder, you let down your defenses at Zaxxon.

"Okay," you answer eagerly, and step over to the Phoenix controls. "I accept your challenge, whatever it is."

"If you can score *eight* straight games,

you can add your initials to the list of winners."

You look down at the videoscreen, but instead of the usual list of winners' initials, it displays a jumble of letters and numbers.

**RTK KVRD DLJK GIFMZUV JVTLIZKP  
WFI KFG JVTIVK FGVIRKZFE DZJJZEX CZEB.  
FIZFE IVGFIK KF NRJYZEXKFE 1800.**

"Hey!" you exclaim, but when you look around, the substitute teacher is already gone. You're on your own.

It doesn't take you long to realize that this is another coded message from ACT — a worldwide network of highly trained experts in every field who share a craving for adventure and a dedication to the cause of good against evil. You've been a member of ACT long enough to recognize their system.

You've got to decode the message to receive your new assignment. Looking down at the screen again, you notice that the "substitute teacher" left her notebook behind, lying on top of the game cabinet. And you see the corner of a flat sheet of plastic sticking out, sort of like a bookmark. The rest of the notebook is blank, but you recognize the plastic sheet as a special transparency, the key to ACT's latest codebook.

Reaching around to your hip pocket, you pull out the new issue of Marvel's *X-Men*.

comic book, the one you just bought on your way over here. You are sure that, as usual, when the transparency is slipped over the next-to-the-last page, the lines of a BASIC program will leap into view — and you're right.

Since you always have your portable computer with you, you're ready for times like this. It's a very powerful unit, about the size of a transistor radio, supplied to you by ACT.

*Input the following program and run it. Lines 20, 50, 60, 130, 160, and 170 should each be typed as one line on your computer.*

### **PROGRAM 1**

```
10 REM DECODER
20 PRINT "WHAT IS THE SECRET
NUMBER? ";
30 INPUT B
40 PRINT
50 PRINT "ENTER THE SECRET
MESSAGE."
60 PRINT "TYPE 'STOP' TO END
PROGRAM"
70 PRINT
80 PRINT "SECRET MESSAGE->";
90 INPUT B$
100 IF B$ = "STOP" THEN 220
110 FOR I = 1 TO LEN(B$)
120 A = ASC(MID$(B$,I,1))
130 IF ((A >= ASC("A")) * (A <=
ASC("Z"))) THEN 160
140 C$ = CHR$(A)
150 GOTO 180
```

```

160 A=ASC(MID$(B$,I,1))
    -ASC("A")+1
170 C$ = CHR$((A + B) - INT((A +
    B) / 26) * 26 + ASC("A"))
180 PRINT C$;
190 NEXT I
200 PRINT
210 GOTO 80
220 PRINT "****END OF DECODING****"
230 END

```

IBM	Apple	Radio Shack	Commodore	TI	Atari			
PC & PCjr	II+	IIe	TRS-80	Color	64	VIC-20	99/4A	400/800
✓	✓	✓	✓	✓	✓	✓		

*This program will run on all personal computers checked in the chart above. See the Reference Manual, page 116, for changes for TI and Atari.*

Of course! A secret number is needed as the password.

What was it the “substitute teacher” said — something about scoring *eight* games? She stressed the number when she said it. That must be the password.

Now enter the password and the encoded message one line at a time.

“Way to go!” you exclaim, excited about a new mission. Then you realize that it’s al-

ready midafternoon. If you're going to be in Washington by six o'clock this evening, you've got to get going! Judging from past missions, a chauffeured vehicle of some kind will probably show up to collect you the minute you step outside.

First, though, you've got to make sure no traces of the ACT message are left behind. You slip a quarter into the video game and — just as you suspected — the coded message vanishes completely from the screen when you push the **PLAY** button.

You're never quite sure how they do it, but ACT is careful never to leave anything to chance.

As for the plastic transparency, you step into the restroom, tear it into tiny pieces, and flush it away. You keep the *X-Men* comic, though — maybe you'll have time to read it during the trip.

You no sooner walk out the door of the video arcade and pause on the street corner than a police car screeches to a halt at the curb. The driver, a uniformed officer, leaps out and opens one of the back doors for you. "Rainy today," you say, even though there isn't a cloud in the sky. There's really no need for the password, because you recognize the driver. It's your old friend, Hot Wheels. You remember him from lots of missions when his driving meant the difference between life and death.

"No snow, though," he mutters. He's

playing it by the book, you think as you jump into the car.

Siren screaming, the car screeches down the street. Sitting in back, you feel both elated and a little bit afraid. Elated, because this kind of treatment makes you feel important. A little afraid, because now you know what it feels like to be a criminal, riding in the "cage." The back doors are locked — and they don't have any handles on the inside. And there's steel mesh between you and the driver.

Looking up, you catch Hot Wheels' eyes glancing at you in the rearview mirror.

"How's it going?" you ask.

He doesn't answer.

After a long, awkward pause, you ask again, thinking that maybe he didn't hear you.

Still no answer.

Your eyes meet his again in the mirror, and this time you see something in his look that you've never seen before. A coldness. A deadly, unwavering stare.

"Hot Wheels. . .?"

A sudden chill comes over you as the police car careens around a corner onto a deserted street leading down to the waterfront.

Those eyes, those deadly, unwavering eyes once again lock with yours in the mirror. That's when it hits you — this man isn't Hot Wheels!

As you watch, the driver steers with one hand, while tugging and pulling at his face with the other. He laughs an ugly laugh as he peels

off the latex rubber mask that made him look like Hot Wheels.

And he talks to you at last — but you don't like what you hear.

“Fool!” he growls. “You’re going to blow this mission before it begins. I’m going to run this car right off the end of an abandoned pier — with you in it! I’ll leap out — but you’re locked in.”

Somehow, despite all of ACT’s security precautions, the opposition is already well aware of the mission. You have no doubt who the opposition is: BRUTE, the international organization of evil. And, as usual, the enemy is playing for keeps!

You claw frantically at the doors, but without handles, it’s hopeless. Siren still screaming, the phony police car swerves onto the final stretch of road, bouncing over potholes toward the pier that looms ahead.

Turning, you kneel on the backseat and begin pounding on the rear window but it’s no use. The glass is bulletproof and impact-resistant. There’s no escape.

You know what your last thought will be:  
*I’m too young to die!*

That’s when you see it — a small speck, gaining rapidly on the car.

A motorcycle! As it closes the gap at breakneck speed, you can see the face of the driver.

Hot Wheels — the *real* Hot Wheels!

But just as he's about to pull alongside, the car hurtles the final distance to the pier and the driver opens his door, jumping free. The motorcycle narrowly misses him as Hot Wheels guns it and grabs for the open door.

The next thing you know, Hot Wheels is in the driver's seat, fighting to stop the car before it plunges off the end of the pier. The world is suddenly spinning around you as he brings the auto under control and fishtails it around to point back in the direction you came from.

The car screeches to a halt inches from the end of the pier, just in time for you to watch the riderless motorcycle tumble end-over-end into the water.

Hot Wheels unholsters a pistol from inside his jacket and drives back in search of the BRUTE agent — but he's nowhere to be seen. As he thrusts the weapon into his shoulder holster, he glances at you in the rearview mirror.

“Code name?” he rasps.

“Orion,” you answer.

His hulking form makes you feel safe.

“Boy, am I glad to see you,” you tell him.  
“I thought I was done for!”

“It was close,” he agrees. “You’re lucky I saw you get in this car!”

You settle back in the seat and breathe a deep sigh of relief as, siren still wailing, the police car speeds you to your true destination, taking corners on two wheels and swerving in and out of traffic. As your knuckles turn white

on the handgrips, you remember now why your chauffeur's code name is Hot Wheels. He lives up to his name all too well.

He flashes a card as you streak through security at Tuttle Air Force Base, and before you know it, the car is screeching to a halt beside a waiting plane.

Hot Wheels leaps out and opens the back door of the car to let you out of the "cage."

"Sorry about the wild ride," he grunts with a lopsided grin, "but I had to make sure you didn't miss your plane."

You gulp and nod, thinking to yourself that at least you'll have time to relax on the flight. You would like to read your comic book, but before you board the plane, Hot Wheels lays a hand on your shoulder.

Passing a sheaf of papers that he's been carrying in an inside breast pocket to you, he says, "Here — read this on the plane. It's background information. They'll be waiting at the other end in Washington to brief you fully."

So much for the idea of relaxing!

As you dash up the steps into the aircraft, the engines begin to whine. It's ready for takeoff, waiting only for you. Over the increasing roar of the engines, you can barely make out the words Hot Wheels calls to you, but they have a sobering effect, reminding you that what's happened so far is only the start.

"Good luck with the mission, Orion!"

---

## CHAPTER

# 2

---

### **Mission Day 01 1800 Hours ACT Headquarters, Washington, D.C.**

The ACT coordinator ushers you through all the security checks and into the briefing room, where you have been prepared for so many other missions. Three other people are already there, waiting.

“Okay,” snaps the ACT coordinator, “all mission members are accounted for.”

You know, of course, you’ll be the computer expert of the team, but you can’t help wondering about the special abilities of the other three. Your curiosity is about to be satisfied.

“We’ll begin by getting acquainted,” announces the coordinator. “You will each please introduce yourself and explain your area of expertise.”

There’s an awkward moment when it seems no one wants to go first. But then a young woman stands and, tossing back her tangled mane of red hair, begins talking enthusiastically.

“Hi, guys!” she says. “My code name is Cat. That’s ‘cause no matter what situation I’m thrown into, I always land on my feet.”

In her yellow jumpsuit with the red ACT insignia, you think to yourself that she does sort of remind you of a cat, very graceful and light.

“I’m a security expert,” she continues, “the best bodyguard in the business.”

She doesn’t even blush, and you know she’s not just bragging. If ACT picked her for this mission, then what she says is true: this small, fragile-looking woman must be a real powerhouse when it comes to combat.

The ACT coordinator clears his throat and gestures for an older man wearing boots, well-worn jeans, a leather vest, and a cowboy hat to step forward and introduce himself. He reminds you of the old prospectors that you’ve seen on TV. And when he starts to speak, he sounds just like John Wayne.

“I’m something of an inventor,” he says. “I like to tinker with things. I can outfit you all with offbeat items and come up with inventions-to-order on the spot. That’s why my code name is Gizmo.”

Straggly white hair frames his face, and there’s gray stubble on his chin, making him look a lot like a harmless, grizzled old guy. But the clear, piercing look of his eyes instills confidence. You feel instantly that he’s someone you can count on in a crisis.

Next, the third of your teammates steps

forward — somewhat stiffly, you can't help noticing. He stands as if at attention, stares straight ahead, and speaks in a monotone.

"My primary sphere of specialization encompasses the field of robotics," he drones, "within the parameters of which I have concentrated in the main on the programming of prototypes."

The ACT coordinator again clears his throat, this time using it as an excuse to interrupt. "What he means is that he programs newly developed experimental robots."

"That is precisely what I said," continues the droning voice without the slightest change in tone. It occurs to you that it must sometimes be difficult to tell this man from the robots he programs. When he finishes by saying, without any hint of irony or humor, "My code name is Spock," you choke back a laugh — for it fits him perfectly, even though you can't imagine him ever having wasted his time on anything so frivolous as *Star Trek*.

At the sound of your stifled laughter, all eyes turn in your direction. You pretend that you were just clearing your throat, and introduce yourself as the computer expert.

The ACT coordinator comes to your rescue by drawing the team's attention to a video-screen on which a series of short segments are shown, and he begins the official briefing.

"A very sensitive top-secret government program — known as *Operation: Missing*

*Link* — is about to pay off at long last. If it is successful, I am told that this country and, eventually, all mankind will make a quantum leap into the future.”

The coordinator pauses for dramatic effect, making eye contact with every member of the ACT crew, before continuing.

“I can’t tell you exactly what’s going on down there — frankly, they’re keeping it so quiet not even we here at ACT central know for sure. You’ll find out what *Operation: Missing Link* is really all about only after you’ve been admitted to the test site, but — ”

“Why do they need us?” blurts Cat. “Has something gone wrong?”

“I was getting to that,” he says, irritably. “As far as anyone knows, absolutely nothing is wrong. Which makes this mission somewhat out of the ordinary, since ACT is being called upon in advance for once — rather than after there’s been trouble.”

“In short, you want us to ride shotgun on *Operation: Missing Link*,” Gizmo sums up.

“After a fashion,” agrees the ACT coordinator. “The Adventure Connection Team is experienced in the unpredictable and may be able to anticipate or improvise in the event of any unanticipated enemy action. After all, ACT knows the enemy best.”

“What he obviously means,” says Spock earnestly, “is that while every precaution has been taken to secure the project against the

known threat posed by rival governments and their not inconsiderable resources, there is no certain fortification against the unknown. Our adversary organization is utterly unpredictable, but sure to strike at a target of such extreme importance.”

“Exactly as I was about to say,” sputters the ACT coordinator. Despite his dry style, you decide that Spock does have a sense of humor. There’s a definite twinkle of devilish amusement in his eyes at having paid the coordinator back for his earlier comment.

“BRUTE will stop at nothing — isn’t that right?” asks the coordinator, staring at you.

“I’ll vouch for that,” you hear yourself say, as you shudder involuntarily at the memory of what happened on the way here.

“Okay, then,” he says, “expect the unexpected. But to tell you the truth, with the kind of high-tech security surrounding *Operation: Missing Link*, I doubt even BRUTE can breach the system. They went after Orion *on the outside*. But once you’re inside — no way. Chances are this will be a very quiet and uneventful assignment for a change.”

Somehow, you doubt it. But you smile as you accept one of the special clearance code cards being passed out by the coordinator.

“Your fingerprints, retina scan patterns, and other identification items have already been sent ahead, team. There’s a car waiting downstairs to take you straight to the secret site.”

---

## CHAPTER

# 3

---

### **Mission Day 1 1840 Hours**

You and the other team members are in the back of a large limousine, traveling rapidly through the Virginia countryside. Low, grassy hills and lots of trees pass by the window to your right, and sometimes you see cows or horses grazing peacefully in fenced pastures.

But you are too tense to sit back and enjoy the scenery, too nervous to appreciate the quiet tranquility of the area. For this is no leisurely tour of the rural countryside, and the limo you're riding in is no ordinary vehicle.

Gizmo, who is an expert on such matters, taps the door and window to his left. "Reinforced armor plate," he notes aloud, "with double-thick bulletproof glass for the windows. Makes a fellow feel real safe."

But it doesn't make you feel any more relaxed. The fact that ACT is taking such precautions to protect you and the rest of the team tells you just how dangerous the situation is.

Spock glances at his watch. "We should be at The Farm in three minutes and thirteen seconds," he announces in his flat voice.

### The Farm?

You wonder why the team is being taken to a farm when you are supposed to be going to the supersecret high-security government research center you've been told about. You conclude that "The Farm" must be code words of some sort, but three minutes and thirteen seconds later (exactly as Spock predicted), the limo approaches the gateway of a large farm.

The gate opens automatically. Once inside, the driver (who is sealed off from you and your companions by a bulletproof, soundproof partition) speeds up the vehicle, and you rocket forward toward a distant farmhouse and a bunch of barns.

The limo reaches them in no time flat — but doesn't slow down!

Veering through the strangely deserted farmyard, the vehicle heads straight for a big red barn. But the doors are closed! Has the driver gone crazy? You're going to crash!

Suddenly, just as the limo is about to slam through them, the wide red doors slide open. Plunging into the darkness within, the limousine comes to a sudden stop. You are rocked violently in your seat, but held securely in place by your seatbelt.

The change from daylight to darkness has been so quick that your eyes have not had time

to adjust. You turn around in your seat just as the barn doors begin to slide shut. In the disappearing light from outside, you see that they are not ordinary wooden barn doors, but are made of solid steel. They give the place the feeling of a fort. Finally, you begin to feel safe . . . and then you feel yourself sinking!

The floor of the barn is an elevator, and you realize it is lowering the limo down into the depths of the earth. You descend for a long time until, at last, the elevator stops and you breathe a sigh of relief. You must be very far underground.

“Bargain basement — everyone out!” Cat wisecracks, imitating an elevator operator in a department store.

All around, lights go on, and the seatbelts open automatically. Soldiers carrying rifles appear on all sides of the limousine.

“Welcome to The Farm,” the driver announces through a radio device, and then the doors of the limo swing open all by themselves. You and your fellow passengers climb out. Looking around, you see that despite being underground, you are in a large, well-lit, air-conditioned chamber. As you watch, the platform carries the car upward, the driver still behind the wheel.

“Very efficient,” Spock remarks.

The guards hurry you and your teammates down a corridor toward what looks at first like a dead-end — until the wall slides back

with a hiss to reveal a room lined with wall-to-wall computers that whirr and click continuously. A military officer springs to his feet to greet your group.

“Security here is the tightest I’ve ever seen,” says Cat, looking around. You know her wide eyes aren’t missing a single detail.

“Show your clearance code cards, please,” the officer states. You can tell from his brusque tone that the word “please” is just a formality — he is giving an order.

While soldiers stand by, rifles at the ready, Cat and Spock show the cards that identify them as members of ACT. So does Gizmo. So do you. The card you present the officer has your photo, identification number, code name, and thumbprint.

“Do any of you have weapons?” the officer asks.

“No guns, knives, or any of that hardware,” Gizmo replies, instead of giving a direct “yes” or “no.” He winks confidentially at you, and it occurs to you that as an inventor, he’s probably designed any number of portable, miniature self-defense gadgets. You wonder if he’s wearing any.

“Put your card in the scanner, press your thumb down on the indentation, and put your eye up to the lens,” the officer orders. Spock steps over to the unit, inserts his card into the slot, and does as instructed. In a second, the card slides back out and a robotlike voice says,

“You are cleared. Pass.” Spock steps on past the scanner.

As Gizmo slips his card into the slot, Cat says, “I’ve seen some nifty systems in my time, but this is pretty impressive.” Gizmo is cleared and so is Cat.

Now it is your turn. As you place your card in the slot and wait for clearance, you wonder what would happen if there was a mistake and the scanner didn’t clear you. Or, what if the machine let an enemy agent slip past?

As if he reads your mind, the officer says, “Beyond this point, security is so tight that even *we* aren’t allowed to proceed any farther. Defense devices that you wouldn’t believe guard this corridor — we even hear they’re using search-and-destroy robots!”

“How interesting,” Spock comments.

No longer escorted by soldiers, you and the others proceed along a narrow, winding corridor that you realize is sloping more and more downward. The light grows dim, and all of a sudden it reminds you of walking through one of those amusement park “Haunted Houses” where, at any moment, spooky things could jump out of the wall at you. Except here the threat is real!

The deadly defense devices that the security officer mentioned\* are dangerous only to enemy agents. You and the rest of the team have clearance, you reassure yourself. You should have no problem.

Suddenly, lights blaze brightly from every side, momentarily blinding you. There's a jarring clang and, squinting against the glare, you see that metal walls have dropped into place both in front and behind the group.

"We're sealed off!" Cat shouts.

Beyond these new walls, you can hear horns blaring and a voice on a loudspeaker calling out: "RED ALERT! RED ALERT! Enemy agents are in the containment area!"

"Enemy agents?" Spock wonders aloud, as if contemplating some puzzle.

"They mean *us*, sonny!" Gizmo yells.

*HISSSS!!*

Looking up, you see that nozzles have appeared high on the walls, near the ceiling. A green vapor is billowing out of the nozzles and rapidly filling the chamber.

"Gas!" shouts Cat, the weapons expert. "We'll be knocked out or paralyzed!"

"Not if I have anything to say about it," drawls Gizmo. He yanks two buttons from his shirt front and flings them to the floor, grinding them under his boot heel.

The pulverized buttons begin releasing a vapor of their own — a red vapor!

You feel yourself getting weak from the green gas. Your legs tremble. You stagger against the wall and slide to your knees. Through the haze, you can see Cat and Spock starting to go down.

Only Gizmo seems in possession of him-

self. He is already flat on his back, enveloped in a red cloud that has mushroomed from the shirt buttons to spread in a mist over the floor.

“Everybody down!” Gizmo orders. You, Cat, and Spock are all quick to obey. The red vapor is rising, seeming to fight the green gas from the wall nozzles. Finally, the red mist wins out, forcing the green mist to the ceiling, where both gases fade away into nothingness.

Your head clears, and you help the others to their feet.

“Fascinating. What exactly was that?” asks Spock, always interested in the scientific aspect, even in a crisis.

“An antigas neutralizing compound I solidified and made into shirt buttons,” Gizmo explains briefly.

“It’s crazy,” Cat says, “but they think we’re enemy agents!”

“It must be either a malfunction in the scanner — or sabotage,” speculates Spock.

A chilling thought hits you. “Someone tampered with the scanner’s computer — probably programmed it so that our clearance cards would set off the defense system!”

“Oh, boy!” exclaims Cat. “If I know security operating procedures, that means each defense we circumvent will only trigger another — each more deadly than the last!”

“Then the only logical solution is to get out of here! The locks are obviously computer-controlled,” says Spock. “There’s an access

terminal over there on the wall. Orion, can you do anything?"

The ball's been given to you, and you only hope that you don't fumble it.

"Get down!" Gizmo yells suddenly, diving and pulling you down to the floor, too. A rapid-fire laser gun on a swivel springs out of the wall and sweeps the chamber with an arc of sizzling laser beams!

Spock is so fascinated by the advanced design of the weapons system that he reacts too slowly, and only the fast-moving Cat, tackling him, gets him out of the path of the laser bolts in time.

You begin crawling toward the terminal on your hands and knees. Cat was right — this attack is much more dangerous than the last. You've got to work fast! You connect your computer to the serial port near the door and before too long you're into the system.

What a system!

Frantically, you punch in a command to get a listing of the program. You were right, the computer is running a combination system — but like none you've ever seen before. The security system is so sophisticated that it generates a random number! There's no way you're going to find the combination just by looking at the listing. You're going to have to create a program that simulates the random number generator and runs through all the possibilities. It doesn't take you long to get it running.

*Input the program and run it. Type STOP to interrupt it when you've seen enough. Lines 100 and 140 should each be typed as one line on your computer.*

## PROGRAM 2

IBM	Apple	Radio Shack	Commodore	TI	Atari			
PC & PCjr	II+	IIe	TRS-80	Color	64	VIC-20	99/4A	400/800
	✓	✓						

*This program will run on the Apple II+ and IIe. See the Reference Manual, page 117, for changes for all other computers in the chart above.*

You know you'll be able to use this program to find the right numbers — the computer will just try every combination until it hits the right one. But that could take hours!

A barrage of brilliant laser bolts traces a pattern across the wall above your head. Perhaps you have only seconds! There's got to be some way to speed up the program.

“Do something!” you scream at your teammates. “I need time! There's no way,” you mutter to yourself. “This is impossible.”

You glance over your shoulder and see the laser arcing in your direction again. Gizmo is pinned down in a corner, but he reaches into his shirt pocket while yelling at Cat, who is out of the line of fire at the moment.

You've noticed that Gizmo carries a sack of tobacco inside his shirt pocket the way the old-time cowboys did — with the sack's

drawstring tag dangling on the outside — even though he doesn't smoke. Now he pulls the bag out and tosses it.

"Catch, little lady!" The nimble-fingered Cat snatches the sack out of midair. "It's an explosive charge!" Gizmo yells. "Pull the tag — and throw it!"

As the laser gun brackets you, and the sizzling hot beams come closer and closer, Cat leaps to her feet and races for the aperture where the gun is mounted on the wall. She pulls the tag from the sack, springs high into the air like a basketball player making a jump-shot, and flings the bag into the opening. Landing in a crouch, she somersaults away from the wall.

**DAK-KOOOMMM!**

There is a loud, forceful explosion, and flames shoot from the aperture. The laser gun ceases to fire — just as it is about to vaporize you — and hangs crazily from its mounting, which is now twisted and blackened by the blast.

"Whew!" you exclaim aloud, then turn your attention back to the terminal. A second ago, you were sure that breaking a random number security system was impossible. Now you realize it's the only hope, and you've got to work fast.

Behind you, there's a whirring clunk, and you hear Cat cry, "Look out!" Glancing back, you see a strange, cone-shaped machine on rollers emerging from a hidden chamber in the opposite wall. It is topped by a metal dome, in

which there is a thick glass "face." Under the glass, a single bright blue light flashes on and off like a blinking eye. A robot!

"It's the Cyclops 441," Spock identifies. "The latest in military robotics. I helped design them — they're very, very deadly!"

"We've got to protect Orion while he tries to break the code," says Cat.

"That's right," you tell your teammates, heart pounding. "I need time!"

"Get to it!" Gizmo orders. "We'll hold that thing off — as long as we can!"

Gizmo, Cat, and Spock form a protective semicircle around you as you crouch at the console, activating your portable computer. You try not to think about anything but the task at hand and begin concentrating on the lines of BASIC in front of you.

*List the program. Study it carefully. Can you see a way to speed it up? Hint: Does the program really have to check numbers starting at "I"? If you're completely stumped, check page 118 of the Reference Manual.*

"Eureka!" you exclaim aloud. "I've got it! I've got the key that will get us all out of here!"

But your teammates are too busy fighting for their lives to acknowledge the good news. You were so busy concentrating that you totally tuned out the battle raging behind you.

“I know the one weak spot of the Cyclops 441 robot,” Spock says, his voice still showing no signs of emotion. “It can only zero in on one target at a time.”

As if on cue, Cat dives across the field of fire, deliberately acting as a decoy to draw fire. Like the combat master that she is, Cat keeps moving in an erratic pattern, alternately flattening out, leaping high, and zigzagging. It’s an amazing athletic performance.

“Okay, Gizmo — now,” orders Spock. Gizmo sweeps off his cowboy hat, takes two long, swift strides that bring him up behind the robot, and drops the hat directly over the metal dome — completely obscuring the single, blinking blue eye.

The cone-shaped robot begins moving erratically, firing every which way. Despite the danger, you can’t help thinking it looks silly wearing a cowboy hat and weaving around the chamber like a drunk.

“Even incapacitated, that unit is deadly,” says Spock. “We’ve got precisely 45 seconds. What are you waiting for, Orion? Get us out of here!”

You punch in the combination as fast as your fingers can fly over the numerical keypad. Then you disconnect your portable computer and make a mad dash along with the others to slip under the edge of the rising wall to safety.

The corridor continues to lead downward,

then makes a sharp bend to the right. No sooner do you and the others step around the corner than there is a deafening explosion that shakes you to the bone.

“What the heck was that?” yells Cat as soon as the noise dies down and the ringing in your ears begins to fade.

“In the event of neutralization, the Cyclops 441 responds by self-destructing. It is, in effect, a rolling bomb. When all else fails, the robot explodes, and the ensuing shrapnel assures that there are no survivors,” Spock explains dispassionately.

Gizmo’s eyes narrow and he gives Spock a long look. “You didn’t tell us that.”

“The information was nonessential. It was imperative that we buy enough time for Orion to insure our escape.” Spock pauses for a second, then adds, “Besides, you didn’t ask.”

There is no doubt in your mind now: Spock has nerves of steel — and a very strange sense of humor. Oddly enough, neither Cat nor Gizmo look at all amused.

But at least the team has survived intact, and you’ve made it beyond the danger zone. You’re safe.

You heave a great sigh of relief and lead the others confidently around the next corner . . .

. . . where the barrel of a snub-nosed machine gun pokes you in the chest and an angry voice orders: “Hands up!”

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## CHAPTER

# 4

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“Don’t shoot!” you call out to the armed guards confronting you. “We’re ACT agents!”

The men pointing machine pistols at you and the rest of the ACT crew seem to be soldiers, but they are wearing uniforms unlike any American military force you have ever seen. They are dressed entirely in black, with thick black bulletproof vests and gleaming black helmets. Each man wears a red armband bearing the insignia of a yellow lightning bolt and carries a snub-nosed machine pistol.

They quickly surround you and your fellow ACT agents.

“If we could speak to the person in charge,” Spock says calmly, “I’m sure we could explain — ”

“Quiet, you!” barks the leader of the strangely uniformed soldiers. All of them are tough-looking and wear grim, hostile expressions — but this officer is the toughest-looking, grimmest, and most hostile of them all. He is also the biggest and strongest-looking.

He wears a patch over one eye.

"Lieutenant Lakey," he commands, "lock these spies up until I find out what to do with them."

Lieutenant Lakey pokes Gizmo in the back with his pistol. "Move it, old-timer."

Gizmo looks threateningly at the lieutenant. "Be careful who you're poking with that pop-gun, sonny."

"You're making a terrible mistake," says Cat to the officer with the eye patch. "While wasting time with us, there's at least one enemy agent — *maybe more* — loose here in the high-security area! Someone's already sabotaged the defense systems and tried to destroy us! If you don't —"

A sergeant cuts off Cat's words. "Come on, miss!" he snaps brusquely. "You heard the lieutenant — *move!*!" He steps behind her and shoves roughly with his left hand while keeping a machine pistol trained on her with his right.

You can see by Cat's blazing eyes that she's about to lose her temper. "Don't shove me, soldier! I'm an agent of ACT and I —"

The sergeant interrupts impatiently. "I said — **MOVE!**!" he yells, and thinking a small, slim young woman like Cat to be perfectly harmless, makes the mistake of shoving her again, pushing his left hand hard against her shoulder.

This time Cat is ready for him. Using the

Japanese self-defense art of jujitsu, she turns to one side, grabbing the sergeant's sleeve and yanking him forward as one of her feet sweeps out to trip him. Suddenly off balance, impelled by the momentum of his own shoving motion, the sergeant tumbles to the floor. Before anyone can move, Cat steps on his right wrist, pinning the sergeant's gun hand down.

All the soldiers raise their weapons as if to shoot.

"Hold your fire!" the officer with the eye patch commands. "That was a foolish thing to do, young lady!"

"I don't like to be shoved," snaps Cat.

You feel your heart pounding; your muscles tense. These black-uniformed gunmen make you feel even more uneasy than you did in the danger zone.

"I suggest that the best thing to do under the circumstances is to cooperate with these soldiers, until we can explain the facts of the situation to the person in charge," Spock says calmly.

Gizmo nods. "I think you're right, considering all the guns they've got."

You and your friends submit peacefully as the soldiers march the group down a corridor, but Cat is still angry.

"Who are these guys?" she demands to know. "How do we know *they're* not the enemy? While we're being held, the real enemy is threatening this whole supersecret project that

we're supposed to be protecting! I demand to speak to the person in charge — ”

“I'm in charge, miss,” the officer with the eye patch says curtly, with the assurance of a man who really is in charge.

“Only in matters of security, Captain Gantry!” snaps a woman who arrives on the scene, just as you are being led toward a large door marked DETENTION AREA. She is very tall — as tall as Gantry himself — very thin, and very serious-looking. She wears thick eye-glasses and the long white lab coat of a scientist. There is a security-clearance card fastened to her coat, up near the collar, and as she draws nearer you can see her photo on the card and read her name under the photo: Dr. Beckmann.

“Release these people at once,” she orders Captain Gantry. “There's been a mistake. They are agents of ACT, sent here to protect *Operation: Missing Link.*”

“And,” comments Cat sarcastically, “it sure seems to need protecting.”

The woman in the smock explains to Captain Gantry, “We checked the computer in charge of the defense system — and it's been tampered with!”

“Impossible,” Gantry protests. “My men have a security net so tight around this place that no one could get through.”

“But someone did!” the woman called Beckmann maintains. “Someone repro-

grammed that computer to treat these ACT agents as enemy invaders. That means, Captain Gantry, that your precious security net has a hole in it — and the enemy is already in among us! Now, release these people!"

You can see by Gantry's cold look as his one eye stares hard at you and your friends that he is not pleased to have his authority overturned. He is, you can tell, a man used to having his own way. But he has no choice.

"Very well, Dr. Beckmann," he tells the woman. "I'm releasing these prisoners to your custody — until I can get to the bottom of this mess! Lieutenant Lakey, keep an escort around these people at all times!" Gantry walks into a nearby room marked SECURITY HEADQUARTERS and slams the door angrily behind him.

"Come with me," Dr. Beckmann says to you and your teammates, and as you follow her out of the security area down a hallway, you notice Lieutenant Lakey motioning some of his soldiers to follow you. The soldiers fall in behind you and while they keep their distance, they follow you wherever you go.

"I'm Dr. Jane Beckmann," the woman says as you walk. "I'm the systems analyst on *Operation: Missing Link*. I'm sorry Captain Gantry and his men treated you like enemy agents. Even though he is a bit high-handed at times, he was only doing his duty — and he is a *very* dedicated man."

Cat asks, "What outfit are those guys

with, anyway? They sure didn't look like regular U.S. Army to me!"

"They're not," Dr. Beckmann explains. "Each man in the squad was handpicked from the armed forces for his fighting ability, and they're now part of the supersecret security force that protects the inner core of this underground complex."

Dr. Beckmann motions all of you aboard a waiting elevator. The soldiers who have been following you hurry to get on, too, but Dr. Beckmann quickly presses the button and the doors close just as the soldiers reach them, shouting, "Wait — "

Cat mischievously waves bye-bye to the furious soldiers through a window.

You feel yourself descending and wonder how many levels this place has!

The elevator stops, the door slides open, and Dr. Beckmann leads you and your friends down a short corridor to a small area that reminds you of a waiting room in a hospital. As you get there, the soldiers who unsuccessfully tried to ride down with you finally arrive, huffing and puffing from having run down the stairs.

Dr. Beckmann motions toward some doors. "Sleeping quarters are in there. You must all be very exhausted from your adventures today, so please take the opportunity to get some rest. Tomorrow, at 0700, the final stages of *Operation: Missing Link* will take place, so you will

be awakened early for a preliminary briefing. Good evening."

After she leaves, Gizmo comments, "She's all business, that one."

"Yes," Spock says. "A very interesting woman. At least someone in charge here inspires confidence."

"But someone in here is a traitor!" you remind them. "Since nobody broke *through* security — except us — that means whoever reprogrammed the computer running the defenses is already here — *on the inside!*"

It is this disturbing thought that is on your mind — and, you know, the minds of your troubled teammates — as you go to your room for the night and try to get some sleep. Several times you try to relax by reading your *X-Men* comic, but even that does not take your mind off the problem at hand. You peer out the door to your room and see that the soldiers assigned to keep an eye on you and your teammates are still on duty, guarding the sleeping quarters. You finally feel glad that they are around — but even the presence of these tough, armed men fails to make you feel safe, because the thought occurs to you:

*What if the guards themselves are traitors?*

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# CHAPTER

# 5

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## **Mission Day 02 0630 Hours**

After a troubled, restless night, you are awokened by Gizmo and go to the waiting room, where breakfast is being served. Cat and Spock are mapping strategy, ready to begin the busy — and tension-filled — day.

Spock asks, “Does anyone have any thoughts on the identity of the traitor?”

Gizmo shrugs. His narrow eyes look around the area suspiciously. “Could be anybody. Even this Beckmann lady.”

“Or this Captain Gantry character,” Cat says. “Who’d be in a better position to breach security than the man in charge of security himself? He seemed too eager to make *us* look like enemy agents.”

Spock reminds her, “It was a logical conclusion, given the fact that the security system had identified us as enemy agents.”

“Well, I *still* don’t trust him,” Cat insists.

You are looking forward to seeing *Operation: Missing Link* in action, and seeing what it really is. But your curiosity is matched by your feeling of unease, knowing that anyone you and your teammates encounter could be the enemy.

Soon Dr. Beckmann shows up. She looks even more serious than she did yesterday. “Good morning. Please follow me.”

You haven’t quite finished breakfast, but you feel Dr. Beckmann is not a woman who likes to be kept waiting, so you grab your portable computer and hurry after her with Gizmo, Cat, and Spock.

In a small room, all of you take seats at a long conference table, and a short, gray-haired, cheerful man with pink cheeks and a red nose enters the room. Except for the lack of a long white beard, he reminds you of Santa Claus. Like Dr. Beckmann, the man wears a lab coat.

“Good morning to you all,” he announces, bustling into the room. He sits at the head of the table and immediately begins his talk.

“I am Dr. Edwin O’Neal — the director of *Operation: Missing Link*. My specialty is the biochemistry of the human brain. Together with my colleague Dr. Beckmann, I have developed what we believe is the most revolutionary use

of computer science and human mindpower that the world has ever seen!"

He pauses a second to catch his breath. You find yourself leaning forward, hanging on his every word with eager curiosity, as he continues.

"We know that the greatest computer of all is not electronic, but organic — the human brain. Yet human beings are subject to many imperfections that interfere with the most efficient use of that brain. All of us are well aware of how hard it is to remember something or solve a difficult problem when we are tired, nervous, or worried.

"Computers are subject to none of these human weaknesses. Barring a mechanical or component failure, a computer will always reach the right conclusion — provided it receives the correct data. But it *cannot* judge the correctness of the data it is fed in the first place."

"As the old saying about computers has it," you find yourself interrupting enthusiastically, "garbage in, garbage out."

Dr. O'Neal chuckles as if this is the first time he has heard the phrase, then resumes his talk. "What Dr. Beckmann and I seek to do is combine the best qualities of the computer and the human brain."

"A most intriguing idea," says Spock. "A marriage between the organic and the inorganic might well result in synergy — producing a hybrid with greater abilities than the sum

of the parts. But how is it possible?"

"Yesterday," Dr. O'Neal explains, "a new device was inserted into the cranium of a human being in a delicate operation performed by expert brain surgeons under the direction of Dr. Beckmann and myself. The device, if we have been successful, will enable its possessor to interface with any computer — *directly!* He'll be able to communicate with any computer, in its own language, merely by *thinking!*"

Dr. Beckmann's eyes shine behind her glasses as she adds, "Just imagine the possibilities! The versatility of the human mind — coupled with the information-processing, speed, and memory-storage functions of a computer!"

"Why call the project *Operation: Missing Link?*?" Gizmo asks, puzzled. "Isn't 'missing link' some kind of an ape-man?"

"Or man-ape," Spock adds. "A link in the evolutionary chain from a lower species — the ape — to a higher species — man."

Eyes twinkling, Dr. O'Neal points his finger at Spock. "There — you have it! The link to a higher species! In this case, from ordinary man — "

"To a superman!" you blurt out, so excited that you interrupt Dr. O'Neal's sentence. "If a man could interface *directly* with *any* computer, anywhere, he could do . . . *almost anything!*"

Dr. O'Neal doesn't seem to mind your

interruption. In fact, he seems merrier than ever. "Exactly, my young computer friend!" he exclaims happily. "The power of his brain would be increased a hundred times — a thousand times — who can put a limit on the possibilities?"

Dr. Beckmann adds, "It is a well-known fact that even the most intelligent human beings use only ten percent of their potential brain-power. Here, we are using the almost unlimited powers of the computer to harness that *other* ninety percent." She smiles, and you suddenly realize how important this project is to her.

And you share her enthusiasm. You remember how many times, struggling with a math problem in school, you wished you had a computer for a brain to give you the right answer every time without fail. Now it is no longer a mere daydream — *Operation: Missing Link* would make it a reality!

Gizmo says, "I can see why security around this place is so tight."

"Yes," Spock says. "The potential for harm, if this fell into the wrong hands, is enormous."

"And while I hate to be the wet blanket at the party," Cat says, "let's not forget that the wrong hands are already poking around here."

"Good heavens, so I heard!" Dr. O'Neal says, aghast. He turns to Dr. Beckmann. "Jane, have you learned anything more about the

computer sabotage that took place yesterday in the security area?"

Dr. Beckmann shakes her head. "I can't determine anything other than that someone — *without* authorization from me — reprogrammed them. And Captain Gantry has been unable to come up with the culprit."

Gizmo says, "Looks like ACT knew what it was doing, sending us here."

"Yeah, a *real* security team," Cat says, "not like those Keystone Kops in black you've got running around here."

Dr. O'Neal stands up. "Then it's all the more urgent that we proceed. Today, the final stage of *Operation: Missing Link* goes into effect." He hurries out the door.

"Let's go," Dr. Beckmann says over her shoulder, and you and your teammates hurry after her.

Dr. O'Neal leads the way through a series of heavily guarded checkpoints. At each one, members of the special security forces inspect the clearance cards carefully. Finally, you arrive at a doorway where Lieutenant Lakey stands guard with three of his men, who hold rifles at the ready.

At the door, Dr. O'Neal pauses and smiles. "Before the final stage of the operation is performed, I thought I should introduce you to the main actor in all this drama. Allow me to introduce you to the 'missing link' himself!"

You follow Dr. O'Neal and your team-

mates through the door and find yourself in what looks like a hospital room. The room is spotlessly clean and well-lit. In a hospital bed surrounded by armed guards lies a man who doesn't look sick at all, although doctors and nurses are checking his pulse, taking his temperature, and making a big fuss over him. He looks like a normal, healthy man, very handsome, with a strong, dimpled jaw. He reminds you of the actors who play private detectives on television, and you feel an immediate liking for him. Only one thing is strange: his head is shaven.

He seems to notice you first, and gives you a wink. When a nurse removes a thermometer from his mouth, he says, in greeting, "Hi, team."

One of the doctors tells Dr. O'Neal, "The patient is in top condition. You may proceed as planned."

Dr. O'Neal tells you, "This is the brave, patriotic soldier who has volunteered for the experiment."

"How does it feel to be the center of so much attention?" Cat asks him.

"Well, ma'am," the baldheaded man answers, "if it's necessary for the good of the world, I'll go through with it."

Dr. O'Neal explains, "We shaved his head for the operation. You can see the scar where the surgeons made the implant."

Gizmo smiles at the baldheaded man. "I

guess that doohickey planted in your noggin makes you the most important man in the world at this moment."

Before he can answer, Dr. O'Neal interrupts, "He is. That's why we have to protect him so carefully."

The doctor then leads you out of the room, but as you depart, you look back at the man in the hospital bed. This time, with a friendly smile, he gives you a military salute. You return the salute.

Next, you are taken to a large room about the size of a movie theater. The walls are lined with computers. In the center of the room there is an open space where one large computer terminal is located.

You notice that Captain Gantry is present, wearing a pistol holstered at his side. "The area is secure, Dr. O'Neal," he says.

"Let's hope so," Dr. Beckmann mutters, and you see Captain Gantry's one eye flash angrily at her.

"Excuse me," Dr. O'Neal says, "but Dr. Beckmann and I have to inspect the equipment."

As Dr. O'Neal and Dr. Beckmann move off, Captain Gantry speaks into a walkie-talkie. "All right, Lieutenant. Bring him in."

The doors to the hospital area open, and the baldheaded man is wheeled in on a movable bed, accompanied by doctors and nurses, and by an armed escort led by Lieutenant Lakey.

They wheel the "missing link" over to the computer terminal where Dr. O'Neal and Dr. Beckmann are getting ready. You feel the excitement start to build in the room. Only Captain Gantry seems uninterested, as he suspiciously watches the doorway and the far corners of the room, looking for possible trouble.

You notice that the baldheaded man is unconscious, and realize he probably has been given some sort of drug to put him to sleep for the experiment. Dr. Beckmann fastens what appears to be a metal skullcap on his head, and you can see wires leading from the skullcap to the main computer on the floor. The doctors and nurses, meanwhile, are hooking their patient up to a machine that you recognize from television and movies as an electrocardiograph.

Finally, Dr. O'Neal announces, "We're ready." You clutch your portable computer tightly in excitement. You'd trade your entire comic-book collection to be in the baldheaded man's place. Just imagine — becoming a human computer!

"Come on," you hear Captain Gantry mutter to himself. "Let's get this over with!" You realize that the tough, one-eyed soldier is as tense as you are!

You see Cat pacing the room, looking around warily. "If the enemy is going to strike, what better time than now?"

Dr. O'Neal pulls a switch. The computer

terminal in the middle of the room lights up and begins to hum. Its disks begin to turn. You see Dr. Beckmann nod to him. He moves to a lever and puts his hand on it.

You hear Spock say softly, "The beginning of a new age for mankind."

Cat wisecracks, "Should we sing 'Happy Birthday'?"

Dr. O'Neal pulls the lever.

The baldheaded man's unconscious form vibrates as the current shoots through his body. Dr. Beckmann quickly checks the skullcap to see that it remains secure on the man's head. You see the needle on the electrocardiograph jump wildly.

One of the specialists says, "It's too much for him!"

Dr. Beckmann waves him away. "We must increase the power, Dr. Tolston."

Dr. O'Neal turns a dial right below the lever he has just pulled. The "missing link's" body begins to jerk against the straps that keep him down. You hardly know the man, but you remember his friendly wink and his cheerful smile, and his dedication to his country, and you want this to be over for him soon. All the excitement you felt over *Operation: Missing Link* is replaced by concern for this man who is risking his life to help science.

The doctor at the electrocardiograph continues to protest to Dr. Beckmann, but the dedicated computer scientist ignores him. She

steps over to the computer terminal and watches a videoscreen where wavy lines are dancing back and forth. You think that she must be studying the man's brain waves.

"More power," she says to Dr. O'Neal, who is no longer the cheery Santa Claus you met, but every bit as stern and serious as Dr. Beckmann. He turns the dial again.

You see the electrocardiograph needle gyrate wildly. The doctor in charge of it shouts, "I don't care how important this experiment is, you can't — "

One of the nurses screams, "You're killing him!"

"Stop it!" you hear yourself shouting against your will — and find that everyone has turned to look at you in amazement.

You feel a comforting hand resting on your shoulder, and a deep but soft and reassuring voice says gently, "It's all right. They know what they're doing." You look up and see that the speaker is Captain Gantry, and you realize he's not such a bad guy after all.

Dr. Beckmann calls out, "We have it! We have a linkage! We have interface!" She shouts to Dr. O'Neal, "Cut the power!"

Immediately Dr. O'Neal turns back the dial and then puts the lever he pulled back into position. The machine's hum dies down, one by one the lights shut off, and the man strapped to the bed relaxes. You see the electrocardiograph return to normal.

You wait tensely as you hear the attending doctors and nurses checking their patient. You hear them muttering things such as, "Heartbeat regular," "Breathing returning to normal," "Blood pressure normal." The physician who had been protesting the experiment to Dr. Beckmann says to her and Dr. O'Neal, "You're lucky you chose such a healthy, strong physical specimen. Only one out of a thousand people could have survived what you put him through — but he's all right now." He adds, "Congratulations."

She replies tersely, "It's not over yet." She and Dr. O'Neal begin unstrapping the man on the bed and removing the wired skullcap from his shaven head. You move forward to get a closer look at what is happening.

The hand resting on your shoulder grips you hard. "No," Captain Gantry orders. "You stay here."

Cat grabs you by the hand and pulls you away from Captain Gantry. "We're ACT members, Captain." Then she says to you, "Come on, Orion," and the two of you move closer to the center of the room. Gizmo and Spock follow.

You are now only a few feet away from the sleeping man on the table. He seems very peaceful.

Dr. O'Neal announces, "Now we will awaken him and carry out the second and final part of the experiment."

The physician protests again. "You can't! Not so soon! He needs rest! He needs — "

Dr. Beckmann interrupts. "We have no time for rest! Security has already been breached here!"

Dr. O'Neal looks at the sleeping man. "I think he deserves a rest after all he's been through. But an hour — not one minute more!"

"An hour!" the physician yells. "That's not enough!"

"It will have to be. Dr. Beckmann is right — time is of the essence!"

As the medical team begins to wheel the sleeping man away, you notice his eyes flicker. Then they open. He is looking directly at you. And one of his eyes winks.

And as they wheel him past you, you notice something that you hadn't had a chance to see before: *The index finger of his left hand is made of metal!*

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## CHAPTER

# 6

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### **Mission Day 02 1027 Hours**

“It’s a bionic finger,” Dr. O’Neal explains. “He allowed us to replace his real index finger with a bionic one.”

*Bionic* — you know what that means from television and countless science-fiction stories. It means that it’s mechanical but structured to act like the human part it has replaced.

“Anyone who’d sacrifice so much for his country is a real patriot,” Gizmo says.

“But think of what he’s gained!” Dr. O’Neal says excitedly. “This bionic finger is linked with the implant in his brain, and it’s the ‘plug’ that enables him to tap into the power of the computer!”

At that moment, the baldheaded man enters the room where you and your teammates have been waiting with the directors of the project. The man is rested now, and while it seems hard to believe that any human being

could recover so quickly from having so much electricity shot through his body, your new friend seems in good condition. He is wearing a track suit and jogging shoes, and looks fit enough to run in a marathon.

"I'm ready if you are," he says with a cheery smile. "I can't wait to test out my new equipment!"

As everyone heads back to the computer center where the experiment took place, you find yourself walking alongside him.

"I heard you were worried about me," he says. "I appreciate it, uh . . ."

"Orion," you reply. "That's my code name."

"You can call me Link," he says, and then adds after a long pause, "for now."

"Link," Gizmo says, "when the whole story of this experiment is told, your country is going to be mighty proud of you."

Link only smiles.

While the computers are being readied, Spock asks, "Has anyone considered the military and intelligence implications of this project?"

Link replies, "I know I have."

"Think of it!" Cat says. "A soldier — or secret agent — with the power to interface with any computer in the world could tap into the defense systems of all the major nations!"

Gizmo rubs his whiskered chin. "He could find out all the defense secrets — control all

the atomic weapons — keep the country from defending itself — ”

“Or,” Spock adds, “start a war.”

“That’s true,” Dr. Beckmann agrees, “it’s been on our minds from the beginning.”

Dr. O’Neal says, “My whole intention was to help advance mankind, not help destroy it! It was Dr. Beckmann who realized the military uses the project could be put to — either by our government or a rival one!”

“Or,” Spock points out, “a sinister organization such as BRUTE.”

Dr. Beckmann looks the humming computer over one last time to see if everything is ready. “Very well, Link. Let’s see what you can do.”

Link steps over to the computer and raises his bionic index finger. You see that the tip is blunt and it has small prongs on the end. He inserts the end of his finger into an opening in the computer.

You wait for something spectacular to happen, but nothing does. Is it a success or failure?

Link removes his finger from the computer.

Dr. O’Neal asks, “Did you feel anything, Link?”

“I felt a small vibration in my finger and in my forearm.” He shrugs. “Nothing else that I can tell.”

Dr. Beckmann allows herself a slight

smile. "Good. Then it's working. The interface ability is supposed to feel perfectly normal. But we'll have to test it."

Link asks, "How about playing The Game?"

Dr. O'Neal has been smiling his usual Santa Claus smile so far, with the experiment progressing as planned. Now, you notice, he suddenly looks worried. "Not *The Game!*"

Cat is puzzled. "What's he talking about? Space Invaders? Frogger? Zork?"

Dr. Beckmann explains. "Knowing the full destructive power we could be giving Link, we devised a 'fail-safe' system. That way, if he were ever caught by an enemy power, the whole system — man and implant — would self-destruct."

Link grins. "What Dr. Beckmann means is that I would go *KA-BOOM* before any evildoers could get this implant out of my dome."

Dr. Beckmann continues, "One way I invented to test the self-destruct device was a computer game that the wearer of the implant could play. If he loses, the self-destruct device is triggered off."

Link chuckles. "Bang — I'm dead." He looks around, saying, "All right — take me to the game room."

Dr. O'Neal says, "No, I forbid it! I thought The Game was a terrible idea when it was proposed, and I still do!"

Dr. Beckmann is calm but determined.

“Our superiors in Washington thought it was an excellent idea when I proposed it, Edwin, and that’s why — need I remind you? — they insisted I program it into the system, despite your protests.”

Link says, “Look, doctors, it’s *my* life on the line. I let you program the self-destruct device into me, knowing full well what it means. I knew I was risking my life from the start of this, but I thought it would be better if we develop this system before an enemy does! I’m a soldier, sworn to risk my life for my country — so let’s get on with it! If the self-destruct system doesn’t work, it’s best we know now!”

With Dr. O’Neal reluctantly leading the way, you follow everyone to the game room. It is an area about the size of a tennis court. In the center is a small chamber with extra-thick cement walls and thick glass windows on all sides. Inside the chamber you notice that a small computer terminal occupies the center of this explosion-proof structure.

“Link,” Dr. Beckmann explains, “you go inside the chamber and take your place at the computer terminal. I’ll be playing at the terminal outside, over here.”

“Ma’am,” Link says, “if it’s all the same to you, I’d rather Orion played against me.”

You gasp.

“If this thing is to work,” Link says, “it must be tested to the full. I understand young

Orion here is a computer-game wizard and won the Alien Attack championship last year."

You are amazed. "How did you know that?"

Link grins. "It was all on the computer I plugged into. Anyway, I'd be honored to go up against a real champ. How about it, Orion?"

You tell them, "I can't! If I won, you—"

Link is suddenly serious. "That's right—I'll blow up. But it's got to be tested, for the good of the country, Orion. Will you do me the honor?"

You like Link, and you admire him. If he asks you, how can you refuse?

"I'll do it," you say.

"Way to go, champ!" Cat says, giving you a hug.

Lieutenant Lakey, who is in charge of the guard detail in the game room, opens the heavy steel door, and Link steps inside the chamber. Lakey closes the door and it makes an ominous clunking sound as it shuts. You watch as Link sits down beside the computer terminal inside the chamber.

Dr. Beckmann motions you over to a computer terminal outside the chamber.

You say, "I'd rather use my own portable computer, Dr. Beckmann. I'm used to it."

"Very well, Orion. I'll help you plug into our system."

Your portable computer is now attached to the system in the game room. You are nerv-

ous, as you were when you entered the Alien Attack championships. Only there you wanted to win. Here, with Link's life at stake, you are not so eager for victory.

Dr. Beckmann reminds you, "Remember, Orion, Link is dedicated to his duty and wants you to play to win."

You nod. Okay, then — you will follow Link's example of devotion to duty. You will play to win.

*Input the program, then run it. Then play the game. The game is a variation of NIM. To win you must leave the other guy, Link, with the last asterisk. On each turn, a player may take 1, 2, or 3 asterisks away. You go first. Save this program if you can; you may get a chance to play the game again later.*

### PROGRAM 3

```
10 REM NIM
20 N = 17
30 FOR J = 1 TO 28
40 PRINT
50 NEXT J
60 PRINT "LOSER GETS LAST" " * "
70 GOSUB 330
80 PRINT "YOU PLAY FIRST"
90 PRINT
100 PRINT "YOU CHOOSE (1,2,3)";
110 INPUT C
120 GOSUB 250
```

```
130 IF E <> 1 THEN 160
140 PRINT "BAD PLAY"
150 GOTO 90
160 IF N > 3 THEN 190
170 C = N - 1
180 GOTO 210
190 C = 4 - C
200 GOTO 210
210 PRINT
220 PRINT "I CHOOSE ";C
230 GOSUB 250
240 GOTO 90
250 IF (C<N)*(C>0)*(C<4) THEN 280
260 E = 1
270 GOTO 320
280 E = 0
290 P = ABS(P - 1)
300 N = N - C
310 GOSUB 330
320 RETURN
330 PRINT
340 PRINT
350 FOR I = 1 TO N
360 PRINT "*";
370 NEXT I
380 PRINT " (";N;")"
390 IF N > 1 THEN 460
400 IF P = 1 THEN 430
410 PRINT "I WIN"
420 GOTO 450
430 PRINT "YOU WIN"
440 PRINT "AAAAAAAAGHHH....."
450 END
460 RETURN
```

IBM	Apple		Radio Shack		Commodore		TI	Atari
PC & PCjr	II+	IIe	TRS-80	Color	64	VIC-20	99/4A	400/800
✓	✓	✓	✓	✓	✓	✓	✓	✓

*This program will run as is on all the computers checked in the chart above.*

Alas, it's just no use.

No matter what you do, you always lose. You find it frustrating to be on the losing end of the game, but you're really enormously relieved — a happy loser, if ever there was one. Deep down, this was one game you honestly didn't want to win. Not at the cost of Link's life! In the short time you've known him, you've come to like Link a lot.

*That's why what happens next comes as the shock of your life!*

Lieutenant Lakey has been standing by on guard duty during The Game. Now that it's over, he steps up to the heavy steel door of the game room — which can be opened only from the outside — and releases the pressure valve designed to withstand and contain the force of a small explosion. As he opens the door with his right hand to let Link come out, he holds his machine pistol loosely in his left hand.

With the treacherous swiftness of a strik-

ing serpent, Link reaches out and grabs the gun!

He shoves the startled, still uncomprehending Lieutenant Lakey inside the chamber, then stands to one side of the open door and trains the weapon on the rest of the group.

“Inside!” he orders. “NOW!”

The machine pistol barks, and with no further warning, both Dr. O’Neal and Dr. Beckmann slump to the floor — dead. Link makes a sharp gesture with the snub-nosed barrel of the weapon toward the door. The short but deadly burst of lead has shown that he means business.

In a state of shock, you and the other members of the ACT crew file into the game room, and Link closes the heavy metal door after you. The door seals with a most ominous hiss.

You and the others are trapped.

“Link,” you finally manage to choke out, “what’s going on? Why — ”

His voice crackles over the intercom as he cuts you off. “The charade is over, young fool. I’ve got you ACT agents — and the rest of the world — right where I want you. The secret of *Operation: Missing Link* now belongs to BRUTE!”

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# CHAPTER

# 7

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## **Mission Day 02 1105 Hours**

“By the stroke of midnight, this country will be under the total command of BRUTE!”

You peer through the bomb-proof window of the game room at the gloating figure of the man who, until a moment ago, you thought was a hero and a friend. Now you realize that he was just using you, and you wonder how you could have been so wrong about him.

Even his voice has changed. All the friendly tones are gone, replaced by harsh, triumphant cruelty.

“Link! You’re the one! It had to be you who sabotaged our clearance codes and almost got us killed in the danger zone!” cries Cat, as it becomes clear at last why no intruder or security breach could be found.

“Indeed,” he answers, then snaps, “and you can quit calling me Link. That was my private joke. After all, the chain of security is only as strong as its weakest . . . link.

“My true code name is Brutus, taken in

honor of the biggest traitor in all history. I have betrayed the trust placed in me — as Brutus betrayed Julius Caesar — and, by so doing, will forever affect the destiny of mankind.”

“Delusions of grandeur,” Spock says, in his usual dry monotone, seemingly unperturbed by the turn of events.

The bald head of Brutus jerks back, and he fixes Spock with a level stare from half-lidded eyes. “I know what you’re trying to do — goad me into making a mistake of some kind. I can expect no less from you as an ACT agent. You’re stalling for time, hoping something will turn up, but I can assure you, it won’t.

“I don’t mind telling you what fools you’ve all been. Everybody was so busy anticipating an assault from the outside that nobody considered the enemy might strike from within!”

Brutus pauses to bare his teeth in a tight, mirthless grin before continuing: “I was senior computer specialist for BRUTE. Through our intelligence sources, we knew the search was on for someone with an extreme aptitude for computer programming to become the subject of a top-secret experiment.

“Using BRUTE’s vast resources, it was possible to fabricate a false identity for me that passed all your careful screening. After that, it was easy. My superior abilities assured I would be chosen as the test subject — then I just had to bide my time, waiting patiently within the

high-security cocoon of *Operation: Missing Link* that was spun around me, until the final transformation took place!"

"And the irony of it is," interjects Spock, "that an elite crew of ACT agents was sent to protect you while the operation took place today."

"Exactly," smirks Brutus.

"And I'll bet the attack on agent Orion yesterday was just a diversion," growls Gizmo. "You had us figured. So you kept us too busy looking everywhere else for BRUTE to pay any attention to you!"

"You're not as dumb as you look, old man," says Brutus, deliberately rubbing salt in the wound, "but I'll save you from guessing the rest. As you know, the project is an unqualified success. Dr. O'Neal and Dr. Beckmann were quite correct about turning the human brain into a component system, with direct interface capabilities to any computer. It will revolutionize the relationship between man and machine!"

"That's why they had to die. You see, I will be the one and only individual on earth with the unique ability to exchange or absorb thousands of bits of information in microseconds — to integrate it instantly and act upon it. Knowledge, as they say, is power."

"You want to keep it all to yourself and use it to control others!" The voice you hear, raised in anger and indignation, is your own.

"Very astute, my young friend," beams Brutus.

"I'm not your friend," you hiss at him.

He ignores your interruption. "When I interfaced with the master computer earlier, to test my new abilities, I took the precaution of erasing all the *Operation: Missing Link* files — so that no one could duplicate the technology. By destroying the only two people who could have recreated the project from scratch, I have made sure there will never be another like me."

"And just what position is that?" asks Cat angrily. "Let me guess: Chief High Mucky-Muck of All Mankind!"

"Something like that," answers Brutus. "I think that I prefer the title Emperor of Earth."

Brutus continues, "I'm sure you know all about the book *1984*, by George Orwell. What he feared was a future in which everyone was monitored by machines, watched by Big Brother. What he didn't foresee was that Big Brother would be one man: ME."

Brutus holds up the hand with a metal index finger. "Accessing the computer banks already in existence, there is nothing I won't be able to find out about anyone. It will all be there, literally, at my fingertip."

"Aren't you forgetting something, skin-head?" drawls Gizmo. "You may have outfoxed us, but what about the U.S. government?"

"BRUTE has been preparing for this mo-

ment, gramps," brags Brutus. "Even as this project shifted into the final phase, BRUTE brought a crash program in robotics to a successful close."

At the mention of robotics, Spock's eyebrows shoot up and he listens closely as Brutus continues.

"An army of specialized robot assassins and saboteurs stands at the ready. To coordinate them all simultaneously in one master coup is beyond the capability of any man or computer — except me. Who but Brutus could monitor the constant data flow and command these advanced-design robots functioning in three widely separate fields of operation — all at the same time?

"With Brutus as the brain, and an army of robots as my mindless mechanical tools, BRUTE will rule the world — beginning with the overthrow of the United States by midnight tonight!"

He pauses, as if expecting your applause. It all seems so unreal to you. Why, only yesterday at this time, you were minding your own business at the video arcade, playing a harmless game of Zaxxon. Now, in just over 24 hours, you've had more than one attempt made on your life — and you're listening to a plan to put BRUTE in total control of the world by midnight!

As if to reassure yourself that this is all real, you reach around behind you to touch the

*X-Men* comic tucked in your hip pocket — the one you still haven't had a chance to read. But even before your fingers brush it, you know that what you're hearing and experiencing is terribly, terrifyingly real.

And there doesn't seem to be a thing you can do about it. You're locked inside a chamber specially designed to contain a bomb!

The sound of Spock's voice interrupts your thoughts: "A robot corps — with you as the commander, Brutus? Clever. Perhaps the perfect plan for one of your infinite information-processing abilities. I've been searching for a solution to the problem of a self-programming robot, but so far it lies beyond the bounds of today's technology."

"Which is where I shall make certain it stays," smirks Brutus.

"Do you mind satisfying my curiosity about the specific functions these units can perform under your command?" Spock asks with a cool scientific detachment that you find maddening under the circumstances. How he can talk shop at a time like this is beyond you. For a split second, you wonder if Spock isn't made of metal himself. But then, when Brutus begins to answer, you realize that Spock is every bit an ACT agent, attempting to draw all possible information from your captor — who cooperates completely.

"There are three strike points," explains Brutus. "The first is Washington, D.C. —

where the President will be captured by robots under my remote control.

“The second is NORAD — the North American Aerospace Defense Command, buried deep in a mountain near Denver. It is the ultimate command center from which all of America’s defenses can be controlled, and BRUTE has devised a way to breach all the elaborate security surrounding the installation. At my command, this country’s defensive missiles can easily become offensive weapons — *I can hold the entire world hostage!*”

“The third target is a nuclear power plant at Cascade Point, not far from New York City. That’s my ace in the hole. If all else fails, I’ll command my robots by remote control to cause a meltdown that will threaten millions of lives unless full leadership of the country is surrendered to BRUTE.

“So you see,” Brutus sums up smugly, “tonight, the United States — tomorrow, the world.”

You can’t believe your ears. It sounds like the kind of plan a supervillain might have in a comic book or a James Bond movie — but this time it’s for real!

Brutus swaggers right up to the bomb-proof window and leers at you through the glass. “You might wonder why I’m telling all this to a captive audience of ACT agents,” he says darkly.

Gesturing back over his shoulder with the

barrel of the machine pistol at the spot where the still, lifeless forms of Dr. Beckmann and Dr. O'Neal sprawl, Brutus snarls: "None of you is going to survive, that's why. I've been saving the best for last. While I made sure all the files on *Operation: Missing Link* were erased when I interfaced with the main computer, I also was reprogramming it to activate this project's self-destruct mechanism!"

Lieutenant Lakey shouts, "You're lying! I know all the security devices in this compound, and there's no self-destruct mechanism!"

Brutus laughs, and the sound of his laughter gives you a creepy feeling. "Do you think your superiors would share *every* secret with you, Lieutenant? Just as they built a self-destruct device into me, to keep the technology from falling into enemy hands, so did the late and beloved Dr. Beckmann build an entire self-destruct network into every floor of this center. If this place is seized by invaders, the main computer is programmed to activate a Doomsday sequence, destroying everyone! *And I have activated that system!*"

"Even as I speak to you, a small bomb built under the very floor we are standing on is counting down to detonation!"

Gizmo asks, "And just how are you fixing to keep from being blown up with us?"

"Oh, that's simple! I'm a privileged person! As the centerpiece of *Operation: Missing*

*Link*, I was given an emergency escape route.” As Brutus talks he is plugging his bionic finger into the computer terminal against the wall. In a second, you see a panel in the wall slide open, and he steps over to it.

“Oh, yes,” he announces, “I thought you’d want to know — you have five minutes to live. So long!” His laughter reverberates in the chamber, then fades.

“Five minutes!” Cat exclaims.

“Less, now,” Spock corrects.

Lakey seems to be panicking: “We’ll never get out! The door is sealed tight.”

Cat quickly inspects it. “Doesn’t seem to be any lock or latch I could pick.” She turns to Gizmo. “Don’t you have any hidden explosives on you — something we could use to blow the door off?”

“You couldn’t blow that door off with anything less than a *bazooka*!” Gizmo says.

Frantically, you try to think of a way out. Then you remember what Dr. O’Neal pointed out — that even the biggest, most powerful and efficient computer in the world is only as good — or as bad — as the information put into it. *Garbage in, garbage out.* Even the computer that runs this center and all the systems in it can act only according to the data it is fed. It can’t think for itself. That’s why Brutus was able to fool it into activating the self-destruct program.

Then it hits you! You realize the fate of

the world rests on your shoulders.

You shout, "We've got a computer terminal in *here!*!" Everyone turns around and looks at you. "I've got to plug into the main computer. Maybe there's some kind of bug or loophole I can find. Somehow Brutus tricked it into going into self-destruct. Maybe I can trick it out of it." While you are speaking, you are hooking your computer into the terminal.

"There's no time for you to crack the code to access the main computer!" Spock says.

"The special access pass formula," Lakey shouts. "I can give it to you. It's on my dog tag." You grab his tag and type in the combination of numbers.

Success! The monitor flashes with the most welcome word in a computer programmer's vocabulary: "Ready."

"Take a look at the security program," Spock advises. "Brutus must have modified it in some way to serve his purposes."

*Input the program and list it. Brutus designed this program to be doubly sure no one penetrated his security. It checks ID codes, but it will shoot any visitor who gives a correct ID as well as any visitor who gives an incorrect ID. The code cannot be changed. Your only hope is to find a bug in the program — but where? First try a simulation run. Use any two-digit number as your ID. Try it five times; see what happens.*

## PROGRAM 4

```
10 REM FAILSAFE
20 I = 0
30 FOR J = 1 TO 28
40 PRINT
50 NEXT J
60 IF I = 5 THEN 280
70 I = I + 1
80 PRINT
90 PRINT "YOUR ID";
100 INPUT F
110 IF F - INT(F/5)*5=0 THEN 140
120 PRINT "INVALID VISITOR ID"
130 GOTO 60
140 B = 0
150 IF F-INT(F/4)*4<>0 THEN 220
160 B = 1
170 IF B <> 1 THEN 220
180 PRINT "BRUTE--DON'T SHOOT"
190 K = K + 1
200 IF K = 4 THEN 240
210 GOTO 90
220 PRINT "INTRUDER--SHOOT HIM"
230 GOTO 60
240 PRINT
250 PRINT "INTERNAL ERROR:
CODE 5"
260 PRINT "SECURITY SHUTDOWN!"
270 END
280 PRINT
290 PRINT "***DOOMSDAY SEQUENCE***"
300 PRINT "***DESTROY EVERYONE!***"
310 END
```

IBM	Apple	Radio Shack	Commodore	TI	Atari			
PC & PCjr	II+	IIe	TRS-80	Color	64	VIC-20	99/4A	400/800
✓	✓	✓	✓	✓	✓	✓	✓	✓

*The program will run as is on the computers checked in the chart above.*

You can barely stand it, but you've got to share the bad news with your teammates. "It's programmed to reject valid IDs and invalid IDs," you explain. "And after five invalid IDs, it goes to a Doomsday mode. I can't see any way around it — unless. . . ."

*Study the listing of the program. If the computer counts off too many BRUTE IDs, it will assume it has an internal problem and shut down. You can see that at line 240. But how will you get it to go to 240? Can you find the bug Brutus left in the program? There's help in the Reference Manual on page 119.*

"I think I found the answer," you say tentatively. Then saying a silent prayer, you run the program, entering the ID codes you think will get you through.

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## CHAPTER

# 8

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### **Mission Day 02 1130 Hours**

The monitor flashes the message: SECURITY SHUTDOWN, SECURITY SHUTDOWN. It worked!

“Wahoo!” Gizmo cheers, slapping you on the back. Cat gives you a big hug. Even Spock manages to smile.

Lieutenant Lakey is amazed. “I can’t believe it! You did it!”

Spock says, “I should point out, however, that a comparatively minor problem remains. We’re still trapped in this chamber.”

Suddenly, you hear a pounding on the sealed main entrance to the game room area. It sounds like people smashing the door with sledgehammers. Then there is silence, and you can hear the commanding voice of Captain Gantry: “Stand back!”

There is a click, and then the door slides open with a hiss. Captain Gantry and his men come running into the game room. They gape at the bodies of Dr. O’Neal and Dr. Beckmann.

Lieutenant Lakey calls to his commander through the intercom system. "Sir, we're locked in here!"

Gantry is carrying what must be the master key to many of the devices and pieces of equipment in the complex. He unlocks a small box built into the side of the computer, and then pushes a button. The door to the chamber you are in slides open, and all of you quickly leave the chamber. You notice the sirens and horns have stopped.

Gantry looks down at the bodies of O'Neal and Beckmann. "What happened?" he asks Lakey, who quickly explains, with the rest of you adding details.

"If we don't act fast," Cat says, "what happened to Beckmann and O'Neal will happen to a whole lot of other people — including the President!"

Gizmo adds, "Captain, we're going to be up against robots, and seeing as how you have a few defense models here, maybe you've also got some equipment I can modify to fight 'em."

Gantry nods. "Lieutenant Lakey, cooperate with these people fully. They've proven they can be trusted. Take him to Robot Production — on the double!"

Gizmo says, "Spock, you're the robotics expert. I think I'm going to need your help. Come with me." With Lakey leading the way, Gizmo and Spock hurry off.

Then Gantry turns to you and Cat and

says, "From what you've told me of Brutus' plans, the most vulnerable of his targets — and the nearest to us — is the President!" He picks up a telephone. "This is Odin — get me Valhalla!" You recognize the names from Viking mythology, and realize Captain Gantry must be using some special code to give him clearance to the White House.

You listen to his conversation. "This is Captain Gantry, at *Operation: Missing Link* . . . I don't care if you've never heard of me . . . we're top secret, that's why! I have to speak to the President! . . . It's an emergency! . . . No, I'm not a crank! . . . Get me your supervisor — let me speak to him! . . . Well, *find* him! . . . Look, I don't have time to play bureaucratic games with you, mister. . . . I tell you, we're running out of time! The President's life is in danger! . . . Robots will be attacking the White House in just a few minutes! . . . Yes, I said *robots* . . . hello? hello?"

Exasperated, Captain Gantry slams down the phone. "Sergeant, get Communications Officer Simmons down here immediately!" he orders one of his men, who promptly runs off. "I'll have Simmons keep trying to get through to the White House — and the nuclear power plant — and NORAD, as well!"

"But, captain," Cat says, "you've seen for yourself how difficult it is to get through the bureaucracy surrounding a high-security stronghold. By the time you cut through all the

red tape, it'll be too late to save anyone!"'

Captain Gantry's one eye flashes angrily. "Then, *miss*, what do you suggest I do?"

You have an idea. "Just get us out of here! Have us transported as quickly as possible to the different targets Brutus told us about! Our ACT clearance cards will cut through the red tape faster than your phone calls, and we can handle BRUTE's robots right on the spot!"'

Cat is overjoyed. "I tell you, Gantry, the kid's a genius!"'

Gantry grumbles, "I never have trusted these kid-genius types." Then he adds, "But I can't think of a better idea."

At that point, Gizmo and Spock return. Gizmo is carrying four small black boxes that look like transistor radios.

Cat asks, "What are those gizmos, Gizmo?"'

"I rigged them up under Spock's direction, using material from the Robot Production equipment," Gizmo explains.

"As Gizmo pointed out to me," Spock says, "Brutus cannot be in telepathic contact with his robot attack-squads — so that means he must be in communication or directing them from a distance, probably by radio."

Gizmo says, "These thingamajigs might be able to jam or at least monitor the radio transmissions between Brutus and his robots."

Cat says, "Orion has come up with a plan. We've got to get to the trouble spots ourselves.

We're the only ones with the top-priority clearances. We're the only ones who can stop these robots!"

"Well, let's skedaddle outta here on the double," Gizmo yells, heading toward the door.

"Wait," says Spock thoughtfully. "It might be better to spend our time tracking down the location of Brutus."

Gantry asks, "Why? It's the robots that count. They're the ones that have to be stopped immediately."

Spock answers, "Robots, as versatile as they may be, are simply tools to be used by human beings — in this case, an evil human being with the mind of a computer — Brutus! The very word *robot* comes from the Czechoslovakian *roboťa*, meaning 'forced labor.'"

Gantry snaps, "Skip the linguistics lecture, mister. Get to the point."

Unfazed, Spock continues: "What good will it do to intercept the workers if Brutus is still free to dispatch more of them on his evil missions? Eventually, he will succeed — unless we can uncover his whereabouts and bring him to justice."

"That makes sense — but enough talk," Cat says impatiently. "Maybe we can get some clues from the robots we do intercept. But in the meantime — let's get to the White House!"

Gizmo hands one of the devices he has built to Cat, keeps one for himself, and hands a third to Spock.

“Lieutenant Lakey,” Gantry orders, “provide these people with transport — top priority — wherever they want to go!” Lakey salutes and hurries off.

You pause at the doorway for just a second. You cannot believe all that has happened to you in this incredible underground lab. It is enough to fill an entire book. But somehow as you head out the door and toward the helicopter, you have the feeling that the important part of the story is just beginning!

### **Mission Day 02 1230 Hours**

You duck beneath the whirring blades of the helicopter and scramble inside. The helicopter should get you to the White House in less than an hour — but will you be in time? And if so, will anyone believe your crazy story when you get there?

“Squeeze in — there’s room for one more!” Gantry shouts over the roar of the chopper. He begins to climb in after you.

“Wait a minute, Gantry. You’re not authorized — ” Gizmo starts to protest.

“The future of my country is at stake!” Gantry cries, climbing in beside you. “I want to be there! I’m not going to wait here and read about it in the newspapers — if there *are* any newspapers after today!”

Gizmo gives him a hand up into the helicopter. A few seconds later, you are aloft, looking down on what appears to be an inno-

cent-looking farm. *If only it was just a farm!*

Gantry takes the seat beside the pilot and picks up the radio. He throws a switch and struggles to make contact with the White House. "Hello, Pretorius — this is Odin! Red Alert! Get the President out of the White House immediately! Repeat — get the President *out!*!"

You can hear only noise at the other end. Are those explosions you hear? Are those human screams?

"Hello, Pretorius!" Gantry shouts.

You realize that *Pretorius* is a code name. It reminds you of the Praetorian Guard who protected the ancient Roman emperors. Gantry is trying desperately to reach someone in the Secret Service. "Red Alert! Red Alert!" he screams.

Still you hear only loud noises at the other end. Finally, a voice comes on. It is a frightened, alarmed voice: "You're too late, Odin! The attack has commenced! Why didn't you warn us earlier?"

Gantry throws up his hands in disgust. The radio microphone drops to the floor. "Now what?" he cries.

"We may still be in time to save the President!" Cat cries. "Just keep hoping it isn't all over before we get there!"

You have nothing to do *but* hope as the helicopter speeds toward the White House — and toward confrontation with Brutus' deadly robots.

Finally, the helicopter is descending onto the White House roof. You hear machine-gun fire and what sounds like laser blasts over the whirl of the helicopter blades.

“Get out — but stay low!” Cat warns as one by one you leap out of the helicopter.

Several holes have been blasted in the roof. The roar of gunfire and grenade blasts is almost deafening. Gizmo takes a rope ladder off the helicopter and attaches it to an air vent on the roof. He drops it down one of the newly made holes.

“Down we go,” he cries, starting down the ladder first.

*Ta-shoooooo! Ta-shoooooo!*

“Someone’s using laser blasters!” Cat cries, pushing you down to the roof as the deadly rays go overhead.

Surrounded by blinding laser lights and the roar of explosions and gunfire on all sides, you scramble down the rope ladder into the besieged White House.

You run from office to office. All are empty, with signs of destruction everywhere. This entire wing of the building has been turned to rubble, then deserted.

“Pretorius!” Gantry yells suddenly, seeing a man carrying a rifle. “Pretorius — it’s Odin! Where is the President? Is he safe?”

“So far — but not for long!” the Secret Service guard replies, his eyes combing the deserted hallways for the enemy. “We tried to

get him out of the Oval Office, but the robots have us cut off! *Look out!*”

You duck away just as a large chunk of the ceiling crashes to the floor.

“Which way is the Oval Office?” you cry.

“This way,” Pretorius says.

“How did this start?” Spock asks, always methodical, always wanting to begin at the beginning — even in a desperate situation like this!

“We don’t know where they came from,” Pretorius shouts as he runs through the darkened corridors. “Someone says they saw a mysterious truck parked about half a block from here. But before it could be investigated, the attack came!”

“Who are they? What do they look like?” you ask, trying to keep up with Pretorius and the others as they run through the rubble-strewn halls. The sound of explosions is getting louder as you near the scene of fighting.

Have the robots already invaded the Oval Office and taken the President prisoner? Will you be in time?

“There are two robots,” Pretorius explains. “They look like giant knights in armor. They’re shooting some kind of laser bolts out of their fists! Nothing we have hit them with — machine-gun fire, grenades, even rockets — has been able to bring them down!”

Just as Pretorius finishes his description, you see one of the robots!

“Stop!” Pretorius cries wildly. “He’s entering the Oval Office! Stop!”

Pretorius drops his rifle and lunges at the giant robot. Gizmo tries to pull him back, but he misses. Pretorius leaps onto the robot’s back.

Suddenly you are blinded by a dazzling light. When you regain your sight a few seconds later, you realize the light was electricity.

By jumping onto the robot’s back, Pretorius set off an electrical charge that knocked him out. He lies on the floor now, unconscious.

The other robot approaches. As you watch in horror, the two mechanical soldiers of Brutus begin closing in on the Oval Office.

“Look — there’s a grenade launcher!” Cat cries, picking up the heavy weapon. “It must’ve been dropped by one of the Secret Service men. Let’s give it a try.”

She aims, than fires.

The grenade explodes over the two robots. They stop for just a moment, then turn.

“Duck!” Spock cries.

You hit the ground just as the laser bolts fly from the robots’ fists. The robots forget about you, a minor irritant, and turn back toward the Oval Office.

“Well, that wasn’t too effective,” Cat says, dropping the grenade launcher. “Now what?”

“Let’s try my little device,” Gizmo says, pulling out the little black box he had made back

at the farm. "It's a long shot — but at least it's a shot."

"If it's a weapon, it's much too small to affect these giants," Spock says, regaining his composure and becoming as analytical as ever.

"It isn't a weapon," Gizmo explains impatiently. "It acts as a small radio transmitter. I think it can also home in on the frequency Brutus is using to send his directions to the robots. Maybe it'll be powerful enough to block Brutus' signals. Then maybe we can use our own signals to reprogram the robots to stop the attack."

***CRAAAAAASH!***

The robots have blasted away the door to the Oval Office. Now, only a few bodyguards stand between the President and these deadly enemies.

"We're out of time! Out of time!" Gantry yells, panic filling his voice.

"Cat — quick!" Gizmo shouts, ignoring him. "Take the device. It must be held within 10 feet of the robots for it to work! You're the only one who's agile enough to. . . ."

He doesn't have to finish his sentence. Cat has already grabbed the transmitter and is making her way toward the robots.

Can she get close enough without being detected? You don't have time to think about it. "Orion, get out your portable computer," Gizmo orders. "Spock, give Orion the trans-

mitter I gave you. Attach your computer to it, Orion. As soon as you can monitor the robots' programming, you can write an override program to change their orders!"

*How can there be enough time?* you ask yourself. *This is impossible!* But you take a fast look into the Oval Office. Cat has come within 10 feet of the robots. The transmitter seems to be blocking Brutus' orders to the deadly invaders. They have stopped. They seem confused.

You begin to work with your tiny computer. "I'm picking up the signal!" you cry happily. "I — I think I can figure out their program."

"Don't think — just do it!" Gantry cries.

"It's up to you to analyze the existing program and modify it," Spock says calmly. "The most logical method would be to change their targets. Reprogram them to hunt — and to destroy — each other instead of the President."

"Can you do it, Orion?" Gizmo asks.

"I — I think so," you reply.

*Input the program and run it. As you can see, the robots are programmed to shoot at anything human and spare anything metal. Can you tell how the program distinguishes between metal and human? If you can, you can change the program so the robots will shoot metal and*

*spare humans. Check the Reference Manual, page 122, if you need help. Modify the program and run it again. Line 220 should be typed as one line on your computer.*

### PROGRAM 5

```
10 REM ROBOTSHOOT
20 DIM N(12)
30 METAL = 0
40 ROBOT = 0
50 HUMAN = 1
60 PRINT "SENSORS ACTIVE...."
70 PRINT "CIRCULAR SCAN FOR"
80 PRINT "HUMANOID FORMS..."
90 PRINT
100 FOR I = 1 TO 12
110 PRINT I;".....";
120 GOSUB 450
130 K = INT(RND(1) + .5)
140 N(I) = K
150 NEXT I
160 PRINT
170 PRINT "SCANNING COMPLETE..."
180 PRINT "ALL HUMANOIDS SCANNED"
190 GOSUB 450
200 PRINT
210 FOR I = 1 TO 12
220 PRINT "AIMING AT ";I;
" O'CLOCK:"
230 GOSUB 340
240 GOSUB 450
250 PRINT
260 NEXT I
270 IF METAL <> HUMAN THEN 310
```

```

280 PRINT "WHY ARE ALL THE ROBOTS"
290 PRINT ".....CHEERING????"
300 GOTO 330
310 PRINT "MISSION COMPLETE"
320 PRINT "LONG LIVE BRUTE!"
330 END
340 IF N(I) = METAL THEN 420
350 PRINT "HUMAN--KILL HIM!"
360 IF METAL = ROBOT THEN 400
370 PRINT "<< CLANK >>"
380 PRINT "WHY DOES HUMAN CLANK?"
390 GOTO 410
400 PRINT "THUD."
410 GOTO 440
420 PRINT "ROBOT--DON'T SHOOT"
430 GOTO 440
440 RETURN
450 FOR A = 1 TO 700
460 NEXT A
470 RETURN

```

IBM	Apple	Radio Shack	Commodore	TI	Atari
PC & PCjr	II+      IIe	TRS-80	Color	64      VIC-20	99/4A      400/800
	✓      ✓				

*The program will run as is on the Apple II+ and Apple IIe. See the Reference Manual, page 122, for changes for all other computers.*

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## CHAPTER

# 9

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### **Mission Day 2 1345 Hours**

One by one, the robots turn their fierce fury against each other. Kaboom! Zap! Flash! You cover your eyes and hold your breath. You feel as if you're suspended in another world, a world of blinding light and never-ending explosions of sound and heat.

When you open your eyes, the robots have been reduced to cinders on the floor of the Oval Office. The President is being helped to his feet by his guards. "That was close," he says, shaking his head, struggling to sound presidential. "We have a few security problems to discuss, don't we, men?"

And what about Cat?? She was less than 10 feet from the explosion. "Wh-what happened?" Cat asks, struggling to sit up. "Did the good guys win?" She is dazed but not seriously hurt. Cats really do have nine lives.

"Well, I'll be danged, Orion. We did it!"

Gizmo cries happily, some surprise in his voice.

“There is no time to celebrate,” Spock says quietly. “Brutus surely knows of our victory. This will make him even more eager to put his other two plans into effect. My prediction is that he will put them into effect *simultaneously*.”

“Then we’ll split up,” Cat says, holding her head.

“We’ll split up — not you, Cat,” Gizmo says. “You’re in no shape to travel.”

“The rest of you can move faster without me,” Cat agrees. “Go!”

Gantry calls, “Mister President, these are the members of ACT who have just saved your life. Unfortunately, the threat to our nation is not over. They need your help. They need the fastest transportation you can provide. Let’s get them on their way, and I will brief you on the entire situation.”

The President rapidly agrees.

“We will need supersonic jets to get us to our destinations in time,” Gizmo says.

“You’ve got them,” the President says. “The entire nation will owe you a debt of gratitude if you succeed.”

“I’ll head for the nuclear reactor at Cascade Point,” Spock says thoughtfully. “I’m good with mechanical things, as you know. Perhaps I can figure out a way to foil Brutus’ plot there.”

“Brutus!” you cry. “We haven’t made any

progress in locating him! We *must* find him!"

"Perhaps we'll pick up some clues at NORAD," Gizmo says.

Moments later, he and you are in a supersonic jet, heading to Colorado and to the top-secret defense command post of NORAD. Gizmo has the radio in his hand and is busily trying to contact Spock.

"I read you loud and clear," you hear Spock's voice say finally. "I'm on my way to the nuclear power plant. I've already picked up a news story that there's trouble at Cascade Point. The details are sketchy. But there are unconfirmed reports that robots are moving in on the core of the main reactor!"

"Well, well," Gizmo says quietly. "It seems our friend Brutus is a man of his word. I'll get back to you soon, Spock. I've got to get through to NORAD now and warn them about Brutus."

Gizmo changes frequencies and works to contact NORAD. You realize that your main feeling at this point is — hunger! The future of the world is at stake, and your stomach is growling!

"I don't understand it!" Gizmo says grimly. "I don't get any response from NORAD, none at all. Either they've sealed themselves off from all communications, or — "

He doesn't want to finish that sentence.

If NORAD has been wiped out, the U.S. is vulnerable to air attack from all sides!

Your feeling of hunger disappears, replaced by a growing knot in the pit of your stomach. Perhaps you are already too late. Perhaps you are flying in this supersonic jet — to nowhere!

“Gizmo, can you read me?”

Spock’s voice on the radio interrupts your grim thoughts.

“Spock, ol’ hoss, where are ya, buddy?” Gizmo asks, a grin crossing his face. “They give you any free lightbulbs down there?”

“There may not be anything left to light up,” Spock says solemnly. “I’m calling from an office near the main reactor. I got a military guard to usher me in here, but now I think I would rather be several thousand miles away — or perhaps on a far planet in a distant galaxy.”

“What’s happening, Spock?” Gizmo asks. “Can you get to the main reactor?”

“No one can,” Spock says. “The robots have released enough radiation to make the area near the core too dangerous for human beings. Even protective suits don’t help.”

“Well, what can be done?” you cry into the radio, leaning over Gizmo’s shoulder, desperate to hear.

“I’m not sure, Orion,” Spock answers. You’ve never heard so much doubt in his voice. “Without getting closer, I don’t have enough data to make a sound assessment of the situation. We already know that Brutus plans to turn

this plant into a gigantic hydrogen bomb. Of course, this would mean the lives of . . .”

Silence.

“Spock! Spock! Where are you? What’s happening?” Gizmo cries.

There is no reply.

“Radiation level might be interfering with the radio transmission,” Gizmo says thoughtfully. “If the level keeps escalating, the whole northeastern United States will be fit only for robots!”

You don’t have time to think about that. Your supersonic jet has landed at the top-secret runway behind NORAD. You look out of the plane. All seems quiet. There is no sign of any fighting or any violence.

“Maybe we’re in time,” you tell Gizmo.

The two of you watch as a unit of armed guards marches out to greet the plane.

You run down the runway, eager to find out what has happened. “Are we in time?” Gizmo asks the leader of the guards.

“In time?” The guard looks confused. “You two maniacs are under arrest!”

“This defense base is in real trouble!” Gizmo tells the guard.

“Not anymore,” the guard says, pulling Gizmo roughly by the arm. “We’ve captured you.”

“But you don’t understand,” you protest.

“Quiet!” the guard snaps angrily. “My commanding officer is calling.” He picks up

his radio receiver and talks as the guards escort you toward the defense installation. "Yes, sir. We took them without a struggle. There are only two of them. A clown in a cowboy suit and a kid. No, sir. I don't know how they could've stolen the jet. We're questioning the pilot now, sir."

"The President gave us that jet!" Gizmo cries.

"Quiet!" the leader of the guards shouts. "No, not you, sir. I was talking to the prisoner. Yes, sir. I am on the landing strip now. Yes, the replacement computer has arrived. It is being transported inside now, sir."

"Replacement computer?" Gizmo cries, watching four men wheel a computer console toward the base. "That's not a computer. That's one of Brutus' robots! You must not let that thing into — "

One of the guards raises his rifle and threatens to hit Gizmo over the head with it. Gizmo goes into a rage. He breaks free of the guards, grabs the rifle from the soldier's hands, and flings it to the ground. He grabs the radio away from the guards' leader.

"I must talk to you, sir! I am from ACT!" he screams into the radio. "We have just come from the White House. That computer you are bringing into the base is a deadly robot!"

"I don't know who you are, but you've been watching too many science-fiction movies," the commander's voice at the other end

says. "Put these prisoners in detention. We'll have to find out which funny farm they escaped from!"

The guards' leader grabs the radio away from Gizmo and shoves him angrily. Gizmo stumbles forward and bumps into the computer console that is being wheeled beside you into the base. He gives it a slap on the back.

"Keep your hands off that!" the guard screams. "One more funny move and I'll order my men to shoot."

Gizmo goes quietly, and you follow, shaking your head.

You are taken to a detention room and searched. Gizmo's little black box, the radio transmitter that saved the President's life just a few hours before, is taken from him. Your ACT identification cards are also taken away.

Then you are left in the room for what seems like hours, but is actually about 20 minutes. Gizmo paces back and forth, back and forth, growing angrier by the second. "These fools! Fools!" he keeps repeating.

Finally, you are brought into a large room filled with computer consoles. Standing behind a desk is a tall, gray-haired colonel in a sparkling, perfectly pressed uniform. "I am Colonel Scoffheimer," he says, standing stiffly. "I'd like to know who you really are."

"We told you," Gizmo mutters angrily.

"I don't believe you," Scoffheimer says, his face reddening just a bit. "I have never

heard of ACT. I do not believe that computers are actually robots. I do not believe a word of what you have told me. All I know is that you invaded this base carrying some sort of radio device and — ”

“Why don’t you call the President?” you cry. “He will straighten this all out. We have no time to argue. The President will tell you that!”

“We have tried to reach the White House,” Scoffheimer says, reddening even more. “The President is not available, it seems. He had some sort of upsetting incident and has left for a rest.”

“Upsetting incident?” Gizmo cries. “Let me tell you — ”

Gizmo is interrupted by one of Scoffheimer’s men. “Colonel — that new computer! It — it just got up and walked off!”

“What!?” Scoffheimer’s face is completely red now. “Computers don’t walk off!”

“Sir, it must have had wheels or something.”

“Follow it! Follow it!” Scoffheimer cries, forgetting about you and Gizmo for a moment.

“The new computer has plugged itself into the main computer console, sir. It has sealed itself off! We can’t get to it now. It’s — it’s — oh no!”

“What is it?” Scoffheimer screams, running over to the thick glass door to see for himself.

“It has activated both the offensive and defensive guided missiles. This computer has gotten all of our missiles ready to launch!”

“Brutus is doing just as he promised,” Gizmo tells Scoffheimer. “He’s threatening the world with nuclear warfare.”

“Brutus? Nuclear warfare? Get these lunatics out of here so I can figure out what to do!” Scoffheimer screams. “I’ve got to stop this stupid computer from launching all our missiles!”

The guards move quickly toward you and Gizmo. Suddenly, Gizmo reaches forward and picks something off a nearby console. It’s his black box, the radio transmitter.

“Drop that!” Scoffheimer warns. “That has been confiscated!”

But Gizmo ignores the frantic colonel. Instead, he grips the black box firmly and presses the button on it.

*BLAAAAAAAAAAAAAM!*

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# CHAPTER

# 10

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## **Mission Day 02 1710 Hours**

When the explosion stops, you are surprised to find that everyone is still standing in place. "Gizmo, what — " you start to ask.

But Colonel Scoffheimer interrupts you. He is staring in disbelief into the room containing the main computer console and the new computer that had taken it over. "You blew up that new computer?? You stopped it from launching the missiles! But how? How?" His face goes from surprise to extreme happiness and relief and then on to disbelief.

"Oh, I gave it a little slap on the back earlier," Gizmo says, acting modest.

"What are you talking about?" Scoffheimer asks.

"I knew your guards wouldn't believe a crazy old geezer like me in a cowboy suit when I told them that new computer was an evil robot. So I slapped one of my patented cure-alls

onto the computer's back. It was a little explosive device that could be set off by the remote-control detonator I was carrying."

"Why didn't you just blow it up in the first place?" you ask Gizmo, still amazed that he pulled this off.

"I couldn't," Gizmo answers. "Too many people might have gotten hurt. I had to wait until no one was around it. When it sealed itself off, I knew I could destroy it — if I could get to the detonator."

"Well, maybe you're not lunatics after all," Colonel Scoffheimer says, fixing the pleat on his uniform trousers. "But still, I — "

"Colonel Scoffheimer, the President is on the phone," an aide calls to the surprised colonel.

He picks up the phone and listens. "Yes, Mister President. Yes. Yes, indeed. We have given them our complete cooperation, sir. We're doing everything we can for them. Yes, sir, you can count on us. Good-bye, sir. And give my best to the First Lady."

When he puts down the receiver, he is a different man. "I do hope you two will forgive me for any inconvenience I may have caused."

"You were only doing your job, Colonel," Gizmo says curtly. "Now, you'd better let us do ours. We haven't much time to spend on sorry's and don't-mention-it's."

"We've got to get a few clues as to Brutus' location," you say, walking over to a

computer console. "Maybe that robot-computer left us a hint or two."

You punch up onto the screen the words the robot-computer had received before it was blown to bits. The following message comes up on the screen:

**YJLZEJFVZ VXNBPEJ FD HRJGIQLIZD,  
AP, BWMD YN MN MNMWGXABBEZO,  
YJLZEJJ CY PBYIKDQ LQQPXCFCZO.  
YJLZEJJ CY DFC OMNXD, VVAVFDVR,  
IZB OATZZVYD.  
ZUS PKJMT, WTWKVETN,  
XP QX KMYNOKMA RI NFS PNVXL.**

"It's obviously some sort of code," you say, as Gizmo looks on anxiously. "Search the robot. Maybe there's something left in there that will help us decode it." Gizmo goes to search the rubble that was once Brutus' prize robot. You continue to study the screen.

A few moments later, Gizmo comes running back, carrying a few sheets of charred paper. "Think this might help?" he asks, putting them into your hand.

"It might," you say. "This appears to be some kind of printout. It's hard to read and it's torn. But wait — it says, 'Enter your key word.' Great! This has the password."

It's a five-letter word. You can make out a "C" and an "S." The last two letters are R and E. You cannot make out the middle let-

ter. It's either A or O, and you're not sure you have the pieces in the right order.

"I might be able to break the code if I have time, but — "

"Work *without* time!" Gizmo cries. "Do it! Just *do* it!"

Which password will unlock the code? There are several possibilities using those letters.

*Input the program and run it. Only one of the words you can make from the letters you found on the printout is the key word. Try to decode a little of the message with one of the key words you can make from the letters. If it's the wrong one, type STOP to interrupt the program and try another key. After several tries, you should get it. Lines 60, 70, 130, 190, and 240 should be typed as one line on your computer.*

## PROGRAM 6

```
10 REM SCRAMBLE
20 P$ = ""
30 J = 1
40 PRINT "ENTER YOUR KEY WORD "
50 INPUT K$
60 PRINT "TYPE EACH LINE OF
          SECRET MSG"
70 PRINT "(TYPE 'STOP' TO TRY
          A NEW KEY)"
80 PRINT
90 INPUT C$
100 IF C$ = "STOP" THEN 290
```

```

110 FOR I = 1 TO LEN(C$)
120 I$ = MID$(C$, I, 1)
130 IF (I$>="A")*(I$<="Z")
    THEN 160
140 P$ = P$ + I$
150 GOTO 250
160 J = J + 1
170 IF J <= LEN(K$) THEN 190
180 J = 1
190 K = ASC(MID$(K$, J, 1))
    -ASC("A") + 1
200 C = ASC(I$) - ASC("A") + 1
210 IF K > C THEN 230
220 K = K + 26
230 P = K - C
240 P$ = P$ + CHR$(P + ASC("A")
    - 1)
250 NEXT I
260 PRINT P$
270 P$ = ""
280 GOTO 90
290 PRINT
300 PRINT "ANOTHER KEY? (Y/N) ";
310 INPUT Y$
320 IF Y$ = "Y" THEN 20
330 END

```

IBM	Apple	Radio Shack	Commodore	TI	Atari			
PC & PCjr	II+	IIe	TRS-80	Color	64	VIC-20	99/4A	400/800
✓	✓	✓	✓	✓	✓	✓		

*This program will run on all the computers checked in the chart above. See the Reference Manual, page 123, for changes for TI and Atari.*

You crack the code!

But what does it mean?

Why would Brutus want such a heavy defense shield put around Owl Creek, Virginia? Where is Owl Creek, Virginia, anyway?

Then it hits you. If Brutus wants that little town defended, it must be because that's where his base of operations is — and that's where Brutus is!

“Gizmo, I’ve done it!” you cry. “I’ve figured out where Brutus and his master computer banks can be found. Some place called Owl Creek, Virginia.”

Gizmo’s jaw drops about a mile. His eyes practically pop out of his head. “Owl Creek? But, Orion — that’s where The Farm is located! That’s where the lab is! That’s where this whole dadblamed adventure started!”

“I get it!” you cry. “Brutus never left. His big escape plan and all that stuff about detonating the complex’s self-destruct mechanism — that was just a trick to throw us off the track!”

“We’ve got to go back to The Farm to destroy Brutus!” Gizmo says. “Colonel, please get our jet ready at once!”

But before you can leave, an urgent radio

message is relayed to you. "Spock!" you cry, hearing his voice over the speaker.

You are embarrassed to say that with all of your problems here at NORAD, you have completely forgotten about your endangered partner back at the nuclear power plant. "Spock — what's happening? We thought you were a goner when the radio went silent!"

"Just some transmission problems," Spock says in his usual even voice. "But we may all be goners anyway. What's happening out there in Colorado?"

You quickly fill him in.

"That means that Brutus will now set the final part of his plan in action here at Cascade Point," Spock says sadly. "Radiation levels are increasing here. The directors tell me we are reaching the point of no return."

"Most of the northeast has been blacked out. There's no electricity anywhere within 800 miles. There is only one chance — one chance, my friends. And I have no choice but to take it."

"Spock — what are you talking about?" Gizmo cries.

"If I can get in close enough to the robots at the core — and if the radiation doesn't interfere with the transmitter, I may be able to reprogram the robots, just as we did the ones that were attacking the President."

"But the radiation level — " you cry.

"I know I won't survive," Spock says.

“But maybe I can destroy the robots along with me.”

“Spock, wait — ” you and Gizmo both cry.

“I can’t let Brutus win,” Spock says, his voice filled with real emotion. “If he triumphs and we are forced to submit to the rule of BRUTE, it won’t be a world I’ll want to live in anyway.”

“No, wait, Spock,” you plead. “There may be another way. Gizmo and I know where Brutus is. He’s back at The Farm, back where we started. If we can defeat him there, you won’t have to sacrifice yourself. It’s a real chance, Spock. Spock?”

“Hello?” You hear an unfamiliar female voice at the other end.

“Where’s Spock?” you ask.

“The man you were just talking to? He left to get suited up,” she says. “I’ve told him he cannot survive this, but he insists on doing it!”

“Please — stall him!” you cry. “Do anything! Just keep him from going in there for a few hours! Please!”

A few hours?

What will you and Gizmo be able to do in a few hours?

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## CHAPTER

# 11

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### **Mission Day 02 2040 Hours**

The supersonic jet takes you to a landing strip near The Farm. You and Gizmo have no plan for how you're going to defeat Brutus and his computer brain — you just know you have to confront him. You have to stop him — and you have to stop him in time to save Spock.

You flash your ACT ID cards at the guards and go down the elevator into the secret underground lab. There, you are greeted by Captain Gantry.

“What are you two doing back here?” Gantry asks, confused. “What happened at NORAD? What about Cascade Point? There’s been very little information. . . .”

“Captain Gantry, seal off this area immediately,” you tell him. “We know where Brutus is hiding — right here!”

“He’s here? In this complex?! Don’t be ridiculous, Orion! Where could he hide out? We patrol every inch of this place.”

“Every inch that you *know* about! When Brutus pulled his disappearing act, he said that there was an escape route known only to him and Dr. Beckmann. Who knows what else was kept secret from even you! There must be secret chambers around here where Brutus is hiding out from everybody!”

“We’ll run a scan of the entire complex.”

“That wouldn’t turn up anything! Not if Brutus wiped out all memory of those secret places from the computer!” you say.

Gantry looks grim. He turns to the intercom. Outside the command room, through the wide bulletproof glass window, you can see Lieutenant Lakey and some of the special security squad on duty. Gantry, speaking to them through the intercom, says, “Lieutenant Lakey — cordon off this area!”

Lakey bursts into action. He directs his men to take up firing positions all around the command center. At each of the two corridors that lead in and out of the area, a gun crew sets up a tripod-mounted heavy machine gun.

Gantry runs over to a row of television screens on the wall. The screens show what is happening on every level of the complex, and aboveground in The Farm area. So far, everything looks normal.

But then, one of the cameras covering The Farm picks up strange figures wearing green uniforms and carrying weapons, sneaking onto the grounds.

Gantry notices them at the same time. "Invaders! Private Simmons, see if you can get me a close-up on camera B."

Simmons flicks a switch, and the camera's eye zooms in so that you can see the men even better. You see on each green helmet the mailed fist of BRUTE!

*BRUTE is invading The Farm!*

Gantry asks, puzzled, "Why weren't our alarms activated? Simmons, notify the guards on ground level that we're being invaded!"

Simmons tries, then says, "Captain, all communications are cut off with ground level! Something's overriding our security system!"

You and Gizmo watch helplessly with Gantry as the invaders overpower and capture the guards in the farmhouse and at the barn. A large number of the BRUTE forces move inside the barn.

Simmons says, "Captain, someone's also overriding control of the barn elevator!"

You feel a stab of fear: BRUTE's attacking forces will be down here in a matter of minutes! And with the defense systems in the corridor — the same systems that almost destroyed you and your teammates yesterday — still unrepai red, nothing can keep them from fighting their way inside!

"It's Brutus!" Gantry says. "He's taking over the system!"

"Correct, Captain!" says a sinister, all-too-familiar voice. On one of the videoscreens

appears the image of Brutus — now wearing the green uniform of a top BRUTE officer. He is sitting at a computer terminal hidden somewhere within the complex.

“Wasn’t it nice of Dr. Beckmann,” says Brutus, “not only to have a convenient escape route for me built into the complex, but also to provide this convenient computer center, right under all your noses? This was to have been the ‘missing link’s’ ultimate stronghold against a full-scale invasion — such as the one I have just made possible. How ironic!”

Simmons says, “There’s fighting in the tunnel. The BRUTE forces are engaging the troops guarding the outer chambers.”

“But our troops are outnumbered five to one!” Gantry says.

“Yes,” Brutus snickers, “the pitiful force guarding the tunnel will easily be overpowered or destroyed, and soon *my* troops will be pouring down the corridor unimpeded to take control of your command center, Captain Gantry — unless you surrender.”

“Not on your life!”

Brutus shrugs. “It’s your life, not mine — and the lives of all your men.”

Gantry asks, “If you could override this computer so easily, why didn’t you do it all along?”

“Because you would have deduced my presence here in time, perhaps, to take countermeasures against me, Captain — and be-

cause this way I could monitor your actions every step of the way. Besides, it was an amusing game to observe you and the ACT agents trying to best me. You did very well. You played a good game. But now the game is over. And just as before, Orion, I won."

Yes, The Game. You remember the first time you played — how you didn't want to win, but you played your hardest anyway — for the good of the country, you thought. And yet Brutus always won . . . just as he always made the first move. *The first move*. . . . There's got to be a move you can make that will throw him off. But what?

Simmons says, "They've taken the first checkpoint, sir. They're on their way down the corridor."

"Oh, yes," Brutus says, "that's right — I have to let my men inside your area." You see him press a button, and the doorway sealing off the entrance into the command area hisses open. Suddenly, the BRUTE assault squad comes charging through the open passageway. Lakey and his men outside open fire, defending the area.

As you watch the fighting with increased horror, you have an idea.

"Okay, Brutus," you say, "you think you're such a great game player? How about that game we played before! *One last time*. If you win, we surrender without any trouble!"

"Wait a minute," Gizmo cautions.

“You conceited little brat!” Brutus says. “You still think you can best me? Very well. But first, I’m going to let even more of my men come down on the elevator.”

More reinforcements! You seem doomed! However, there’s still a chance. . . .

“All right,” Brutus says, “as more of my men hurry to join you, let’s begin The Game!”

*If you have been able to save Program 3, call it up and list it now. If you didn’t save it, input it again. You’ll find it on page 56. Somehow, you’ve got to modify the program and change the game so that Brutus will lose. Study the listing, and you should be able to realize what Brutus’ strategy is. Try to change something about The Game so that his strategy won’t work. How about changing the number of asterisks? Can you modify the program to do that? See page 126 of the Reference Manual for help.*

An overwhelming explosion rocks the entire complex. It feels as if the entire thing might collapse on top of you. You look away from the videoscreen. You don’t want to see the grisly sight of Brutus’ destruction.

You have defeated him by winning The Game. But you don’t feel good about it. In fact, you almost feel sorry for him. Having the powers of a computer didn’t make him think any more clearly or correctly. He was still a flawed human after all.

On the videoscreen you can make out the bionic finger, still plugged into the computer terminal, a blackened, useless piece of steel.

“We’re not out of the woods yet!” Gantry cries. He is pointing to the BRUTE reinforcements pouring out of the corridor. “It’s still hopeless — HOPELESS!” Gantry cries.

Only Lieutenant Lakey and two of his men remain to defend the complex. They are huddled behind cover, desperately returning the fire of the BRUTE troops.

And then suddenly the whole picture changes as you and Gizmo stare in amazement. The new arrivals suddenly open fire on the BRUTE forces!

“Gizmo, look,” you cry. “The leader of the new bunch has long, wavy red hair under her BRUTE helmet.”

It’s CAT!

Caught in a crossfire between Cat and her soldiers and Lieutenant Lakey and his men, the BRUTE invaders soon surrender.

A few minutes later, you are reunited with Cat. She explains: “The President gave me an armed escort of Marines back to The Farm. I wanted to come back here and search for clues as to Brutus’ whereabouts. I had no idea what I’d find. But I knew something was wrong when there was no one at the gateway and the gate didn’t open.

“We sneaked up on a squad of BRUTE commandos who were occupying the farm-

house. We overpowered them and borrowed their uniforms. And that's about it. I see that you two are okay — but where's Spock?"

Spock!

"What's going on? Come in, Orion." It's Spock's voice over a radio speaker.

"Spock — you didn't go into the reactor!" you cry.

"I was on my way," Spock says. "But for some reason, the robots self-destructed a few minutes ago. Radiation levels in the power plant are already beginning to fall. I guess the crisis was averted, for some reason."

"Spock — *we're* the reason!" Cat yells.

"What? What happened?" Spock asks, sounding completely bewildered.

"Brutus and I played one more game," you explain. "He lost."

"Okay. Guess I'll go home. I have some work to do on a new robot prototype I'm developing," Spock says.

That's Spock, all right. Now he'll go back to work as if nothing much happened today out of the ordinary.

You sink down into a chair. What a way to spend the weekend! You want to go home and sleep for a month. But then you remember: "Oh, no! I still have homework to do! And it's already Sunday night!"

"Oh, well," you tell yourself. "I'll get it done. It won't be so bad. As long as I don't have that strange substitute teacher again. . . ."

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## REFERENCE MANUAL

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**Note to User:** The programming activities in this book have been designed for use with the BASIC programming language on the IBM PC, PCjr, Apple II Plus or Apple IIe (with Applesoft BASIC), Commodore 64, VIC-20, TI-99/4A, Atari 400/800, Radio Shack TRS-80 Level 2 or greater, and the Radio Shack Color Computer. Each machine has its own operating procedures for starting up BASIC. So make sure you're in BASIC before trying to run any of these programs.\*

The version of the program included in the text will generally run on most of the computers listed above. However, a few of the commands used are not available on some home systems. If the program as given does not run on one of the micros listed above, modification instructions will be included in this Reference Manual. TI-99/4A users, please note: The Texas Instruments version of regular BASIC

\*Also make sure you type NEW before entering each program to clear out any leftovers from previous activities.

doesn't allow multiple statements on a line or the word GOTO following a THEN. Multiple statements on the same line should be entered as one statement per line number and any THEN GOTO line number should be entered as just THEN line number.

Even if you're using a computer other than the ones mentioned, the programs may still work, since they are always written in the most general BASIC.

If you need help with one of the computer activities in the *Micro Adventure*, or want to understand how a program works, you'll find what you need in this manual.

Naturally, programs must be typed into your computer *exactly* as given. If the program should run on your computer but you're having problems, do a list on the program and check your typing before you try anything else. Even a misplaced comma or space might cause an error of syntax that will prevent the whole program from working.

## **TERMS YOU NEED TO KNOW**

Computer experts have a special "language" they use when talking about programs. Here are some common terms that will help you understand the explanations in this manual.

**Arrays** are groups of two or more logically related data elements in a program that have the same name. However, so that the individual elements in the array can be used, each is also identified by its own address (called an *index* by programmers). You can think of an array as an apartment building. One hundred people might live at the Northwest Apartments (or 100 pieces of information might be stored in the NW array). But each unit within the building has a number (like Apt 14), so that it can be located and receive mail. In the NW array, 14 could be the index to find a particular piece of information, and would be written NW (14). If you put the 26 letters of the alphabet into an array called Alpha, then Alpha (2) would equal B because B is the second letter of the alphabet.

**ASCII** (pronounced *asskee*) is the standard code used by most microcomputers to represent characters such as letters, numbers, and punctuation.

**ASC** is a function in BASIC that will supply a character's ASCII code. For example ASC("A") will give you the number 65.

**Bugs** are errors or mistakes in a program that keep it from doing what it's supposed to do. Some of the programming activities in this book will ask you to find and fix a bug so that the program will work correctly.

**Functions** are ready-made routines that perform standard calculations in a program. It's sort of like having a key on a calculator that computes a square root or the cosine of a number. The programming language BASIC comes with a number of standard functions to perform certain tasks. For example, the function `SQR(x)` will find the square root of any number when `x` is replaced by that number. You might want to check the BASIC manual that came with your computer to see which functions are available on your system.

**INT** is a function that changes any number that you supply into a whole number or integer. For example `INT(4.5)` will return the value 4. For numbers greater than 0, INT just throws away any fractions and supplies you with the whole number.

**Loops** are sections of programs that may be repeated more than once — usually a specified number of times, or until certain conditions are met. For example, if you wanted to write a program that would count from 1 to 100, a loop could be used to keep adding 1 to a counter variable until the number 100 was reached. Loops are most commonly formed with `FOR/NEXT` statements or `GOTO` commands. You'll find many examples of these in the programs in this book.

**Random Number Generator** This function, which is called RND in BASIC, lets you generate numbers at "random" just as though you were throwing a set of dice and didn't know which number was going to come up next. In most home computers, the RND function returns a fraction between 0 and 1. To get numbers in a larger range, the program must multiply the fraction by a larger number. For example, RND \* 10 will produce numbers between 0 and 10.

**REM** This command is used to tell the computer that whatever is on a particular line is just a comment or a remark and should not be executed. An example might look like this:

**10 REM THIS PROGRAM COUNTS DOWN**

**Variables** are names used to represent values that will change during the course of a program. For example, a variable named D\$ might represent any day of the week. It may help you to think of a variable as a storage box, waiting to receive whatever information you want to put in. Variables that deal with strings of characters are always followed by a dollar sign. Variables that end in a percent sign always hold integers (whole numbers like 1, 2, 3, 500). Variables with a pound sign or no special character at the end hold numbers that may contain fractions. The number of characters allowed in a variable name varies from computer to computer.

## PROGRAM 1: DECODER

### Modifications for Other Micros

*Atari*—Make these changes:

```
15  DIM B$(255),C$(1)
120 A=ASC(B$(I,I))
160 A=ASC(B$(I,I)) - ASC("A") + 1
```

*TI-99/4A*—Make these changes:

```
120 A=ASC(SEG$(B$,I,1))
160 A=ASC(SEG$(B$,I,1))
      -ASC("A") + 1
```

### What the Program Does

This is the decoder program that ACT uses to send Orion secret messages.

### How the Program Works

It uses a secret number from 1 to 23 to decode the message. Any other number will leave the message scrambled. Be sure to use only capital letters!

Only the letters from A to Z are scrambled. The numbers and special characters like periods and commas are left alone.

Line 110 starts a loop that looks at each letter of the scrambled line. Line 120 extracts the letter. At line 160 the ASCII value of the character is *normalized*. That means that the value of A becomes 1 and the value of B be-

comes 2 and so on. This helps the program run on different computers.

In line 170 we add the secret number to the normalized value of the character and do a *modulo* (remainder) function to make sure that the number we end up with stays between 1 and 26. At the end of line 170 we add back the ASCII value of A so that we can print the character in line 180.

You can use this program to *encode* or *decode* messages. Here's how:

Run the program to encode a message. Use a number from 1 to 23 as the secret number. Now, to get the secret number to *decode* the message, just subtract the number you used to *encode* the message from 24. For example, if you used the number 17 to *encode* the message, you use the number 7 ( $24 - 17 = 7$ ) to *decode*.

## **PROGRAM 2: LOCKPICK**

### **Modifications for Other Micros**

*Atari*—Make these changes:

**20 N=INT(RND(0)\*200)+1**

*TI-99/4A and IBM-PC*—Make this change:

**15 RANDOMIZE**

**20 N=INT(RND\*200)+1**

*VIC-20 and Commodore-64*—Make this change:  
**15 N=RND (-TI)**

*Radio Shack Color and TRS-80* — Make these changes:

**20 N=RND (200)**

## **What the Program Does**

This program will discover the combination that will allow you to gain entry, but it is *too slow!* Your only chance is to discover how to get it to do its task more quickly!

## **How the Program Works**

Looking at the program, you notice that the combination is being produced by a secret pseudo-random number generator. It is right there in line 20. There is no way you can change that code . . . but wait! You notice that line 30 changes the value of the combination numbers! Something is being added to each one. It's the 5,000 in line 30. You realize that no number in the combination can be less than 5,000, but when you ran the program before, it started looking for numbers at 1! Now you see how you can make the program work faster! It should start counting at 5,000!

Where is the counter? It must be *J*, since that is the number that is printed out as either CORRECT or INCORRECT. You see at line 40 that *J* is started at 1. You must change this

statement to start *J* counting at 5,000! Change the program at line 40 and watch the results. Congratulations, you have saved the mission.

## **PROGRAM 3: NIM**

### **What the Program Does**

This is a simple game. To win, you must leave the other guy with the last asterisk. On each turn, a player may take 1, 2, or 3 asterisks away. In this version, you play against the computer, and *you* always play first!

### **How the Program Works**

We use the subroutine that starts at line 330 to print out the line of asterisks. Then on your turn, you choose a number *C* as the number of asterisks to remove. That number is checked in the subroutine, and the number of asterisks is removed from play. The computer always plays the same move. In order to win, starting at 17 asterisks, Link just subtracts whatever you played from 4! When he finally gets you down to 4 or less, he just takes all but one . . . and you *lose*! He seems to win no matter what numbers you play!

## **PROGRAM 4: FAILSAFE**

### **What the Program Does**

This program was designed by a BRUTE

programmer to be *failsafe* — that is to be doubly sure that nobody, but nobody, makes it through the security system alive. All visitors are required to identify themselves with a code with the Visitor formula. BRUTE agents identify with a code calculated with the BRUTE formula. All “visitors” are shot. If there are a large number of visitors, the system assumes that it is an attack, and initiates a Doomsday sequence that destroys everyone. The program should be failsafe; it will not allow any visitor who gives a correct ID and will shoot any visitor who gives an incorrect ID five times. The code is locked. It cannot be changed. Your only hope is to find a way to beat it . . . perhaps a bug in the program.

## **How the Program Works**

The variable *I* is our incorrect ID counter. If *I* reaches 5, then the system assumes that a Visitor is attacking, and initiates the Doomsday sequence, which starts at line 280.

The variable *F* holds the ID that the Visitor or BRUTE agent gives. It is tested against two formulas, one for Visitors and one for BRUTE. It must be divisible by 4 to be accepted as a BRUTE ID. If it is divisible by 5, a Visitor is present, and is shot, and the attack count clicks up one more. If *F* is not divisible by either 4 or 5, then the system clicks the attack count, but does not shoot.

Variable *B* is the BRUTE sensor. It keeps track of whether the person is a Visitor or a BRUTE agent. It is set to 0 before testing the BRUTE formula. It becomes a 1 if the ID passes the BRUTE formula. So BRUTE = 1 and non-BRUTE = 0.

At lines 240 to 270, there is a special part of the code. If too many BRUTE agents show up, the machine has been programmed to sense it has an internal problem and to shut down. If you could only get it to go to line 240. But how?

Study the code carefully. . . . The program checks for a valid Visitor ID at line 110. If it gets one, then it sets the BRUTE indicator to 0 at line 140, but then the next thing the code does is check for the BRUTE ID! If *F* is a BRUTE ID, the BRUTE indicator is set back to 1! So, if there is a code that can pass *both* a Visitor and BRUTE, then it will always end up as a BRUTE ID in the program because that is what gets checked last. You realize that any number that can be evenly divided by both 4 and 5 will work. All you have to do is enter that sort of number enough times and the system will shut down!

It was an easy sort of mistake for the BRUTE programmer to make. You've seen it before . . . your skin was saved because he didn't skip over the test for the BRUTE ID after the person had been identified as a Visitor. You've never been so grateful for a bug.

## PROGRAM 5: ROBOTSHOOT

### Modifications for Other Micros

*Atari*—Make this change:

130 K = INT(RND(0)+.5)

*Commodore-64 and VIC-20*—Make this change:

15 N=RND(-TI)

*IBM-PC and TI-99/4A*—Make these changes:

15 RANDOMIZE

130 K = INT(RND+.5)

*Radio Shack Color and TRS-80*—Make this change:

130 K = RND(2)-1

### What the Program Does

This program simulates a robot scanning a group of persons or objects. It has been programmed to know that robots are made of metal and humans are made of flesh. It will shoot all humans. It will not shoot robots.

### How the Program Works

Since your microcomputer can't really tell what's metal and what's not, the program pretends to do this by randomly deciding what are metal objects and what are humans. This is done between lines 100 and 150. All "metal" objects are given a value of 0 and all "hu-

man'' objects are given a value of 1. These values are stored in the variable N.

From line 210 to line 260 we are in a loop that aims at and shoots humans. The nitty gritty of this program is in the subroutine that starts at line 340. There we check each element of the array N to see if it was scanned as metal or as human. Anything metal is considered a robot and left alone.

Look at line 340. That is where we decide to shoot or not to shoot. Anything metal is left alone. Now look at line 30. Metal is equal to 0, and human is equal to 1. What do you suppose would happen if we played a trick on the program and changed the value of the variable metal to 1? There's a sure way to find out! Change line 30 so that METAL = 1. Run the program again and watch what happens!

## **PROGRAM 6: SCRAMBLE**

### **Modifications for Other Micros**

*TI-99/4A*—The TI uses SEG\$ to get a part of a string instead of MID\$. It works the same way:

```
120 I$=SEG$(C$,I,1)
160 P$ = P$ & I$
190 K=ASC(SEG$(K$,J,1))
      -ASC("A")+1
240 P$=P$ & CHR$(P + ASC("A")
      - 1)
```

*Atari 400/800*—The Atari handles strings differently than most other microcomputers. Add this line to encoder or decoder program:

```
15  DIM K$(10),C$(255),P$(255),  
    I$(1),Y$(1)
```

and change the following lines:

```
120 I$=C$(I,I)  
140 P$(LEN(P$)+1)=I$  
190 K=ASC(K$(J,J))-ASC("A")+1  
240 P$(LEN(P$)+1)=CHR$(P+ASC("A")  
    -1)
```

### **What the Program Does**

This decoder program uses a “key” to decode secret messages. A key is a special word that tells the program just how to decode each letter of a message. Unfortunately, you aren’t sure which of the words you can make with the letters you found is the right password. Try all the anagrams until you find the right one — SCORE.

### **How the Program Works**

Remember that letters are stored in the computer as numbers. The computer is smart enough to show you letters unless you want to see the same number the computer sees. That is called the ASCII value. When we want to see the ASCII value, we use the ASC function on a letter to get it. Those values for the letters A to Z are sequential. This means that

ASC("A") gives us a number, and ASC("B") gives us a number that is just one more, and so on, way up to ASC("Z"). We can use the CHR\$ function to get us back to a letter. If ASC("A") gives us a 65, then CHR\$(65) gives us an "A."

We use both of these functions in this program.

To encode the message, we use a formula like this:

key = **SCORE**

msg = **THIS IS YOUR MISSION**

formula =

**SCOR ES CORE SCORES C** key  
**—THIS IS YOUR MISSION —** text

---

**I G I L J J P C J A P F Y Z J N A** cipher  
(the encoded message)

The way the program works, the key is always the sum of the values of two other letters. One of the letters is the plaintext, the other is the encoded letter. You get the secret message by subtracting the plaintext from the key, repeating the key as often as you need to.

We can't add and subtract letters. First we must turn them into numbers by using the ASC function to get their ASCII values. Sometimes the plaintext ASCII value is larger than the key value we want to subtract it from. If that happens, we add 26 to the key value so

we don't get negative results. This is like a "carry" in arithmetic. You can see how it happens in lines 220 and 230.

Then we use the CHR\$ function at line 240 to turn the numbers back into letters and add them onto the end of our final string, P\$.

Notice that we leave spaces and punctuation just as they are in the original message. Lines 130 to 150 take care of this. They only let characters from A to Z be encoded. (NOTE: On some computers, this program won't work correctly if there are commas or colons in the message.)

Here's something really interesting about this program. It can *encode* your messages as well as *decode* them. This may seem a bit magical, but the reason is that we always get the key when we add the encoded letter to the plaintext number. That means that to get the unknown letter, either plaintext or "cipher," we just subtract the "letter" we *do* know from the key. (Yes, this is algebra!)

## **SEVENTH COMPUTER ACTIVITY— CHANGING THE NIM GAME PROGAM**

The easiest way to beat Brutus at his game is to change the number of asterisks to 15. You do this by changing line 20 to:

**20 N=15**

Good Luck.



# MISSION NAME: MISSING LINK



**Your name is Orion and you are face to face with the most advanced form of artificial intelligence ever created. Too bad he's going to kill you.**

Half-human, half-computer and all evil, the vicious Brutus is leading a robot army against the world! As the computer whiz of ACT (the Adventure Connection Team) it will be up to you to stop him.

You must use your micro to:

- beat a supercomputer at its own game
- break through the enemy's unbreakable failsafe security system.
- reprogram the robots to attack each other

**Robot Race is more than a great adventure story. It's danger, action, suspense—plus computer programs for you to run.**

The programs will run in BASIC on the IBM PC, PCJr., APPLE II+, IIe, COMMODORE 64, VIC-20, TI 99/4A, ATARI 400/800, RADIO SHACK TRS-80 (Level 2 or greater), and RADIO SHACK COLOR COMPUTER.



Includes a reference manual with user tips and explanations of the programs!

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