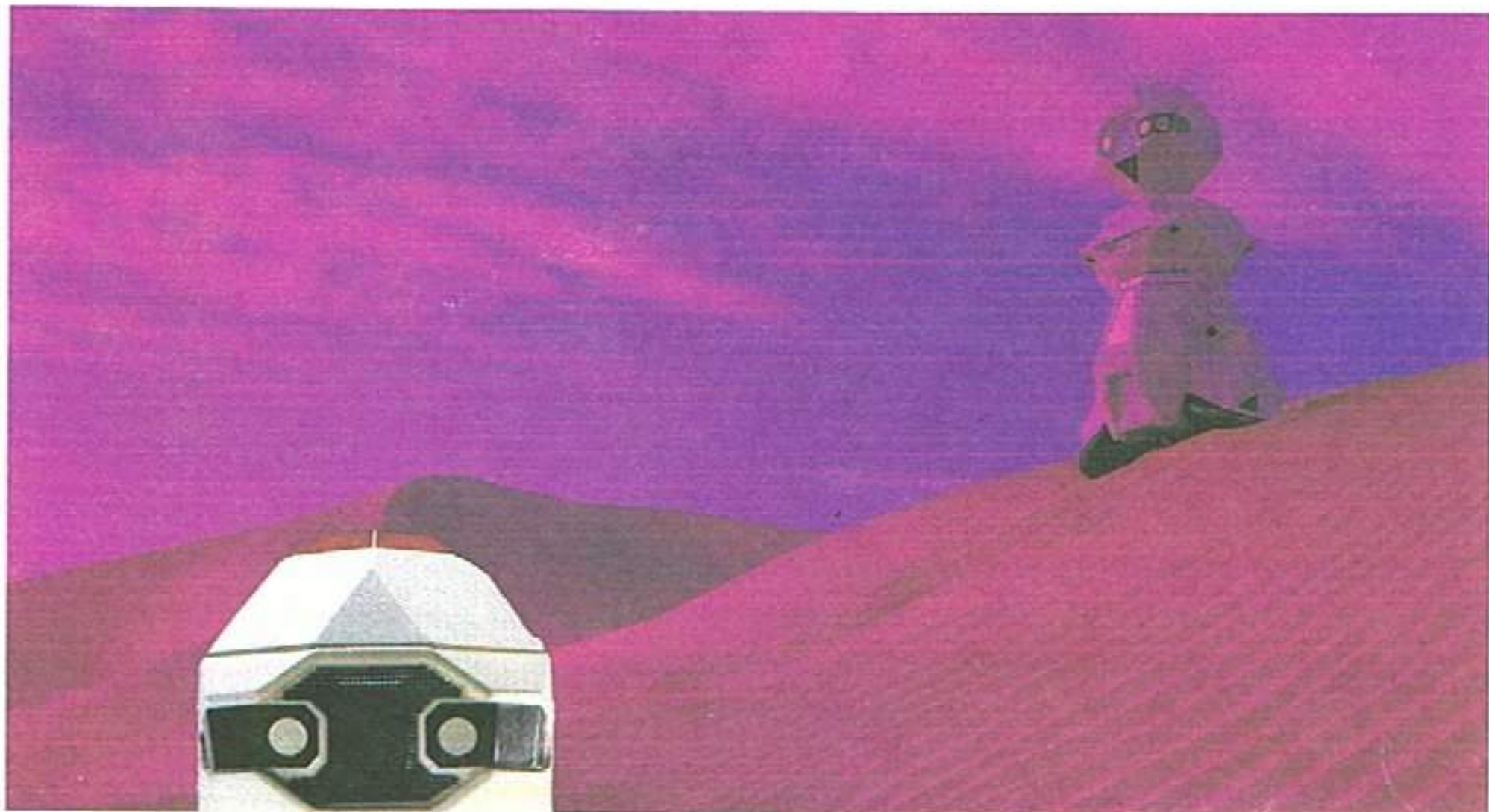


Topo™

The world's first personal robots—from Androbot.™



Meet Topo.™ He's a mobile extension of your personal computer.

He teaches you about computers. He entertains. Socializes. He's one of the family. Your friend and guide to the

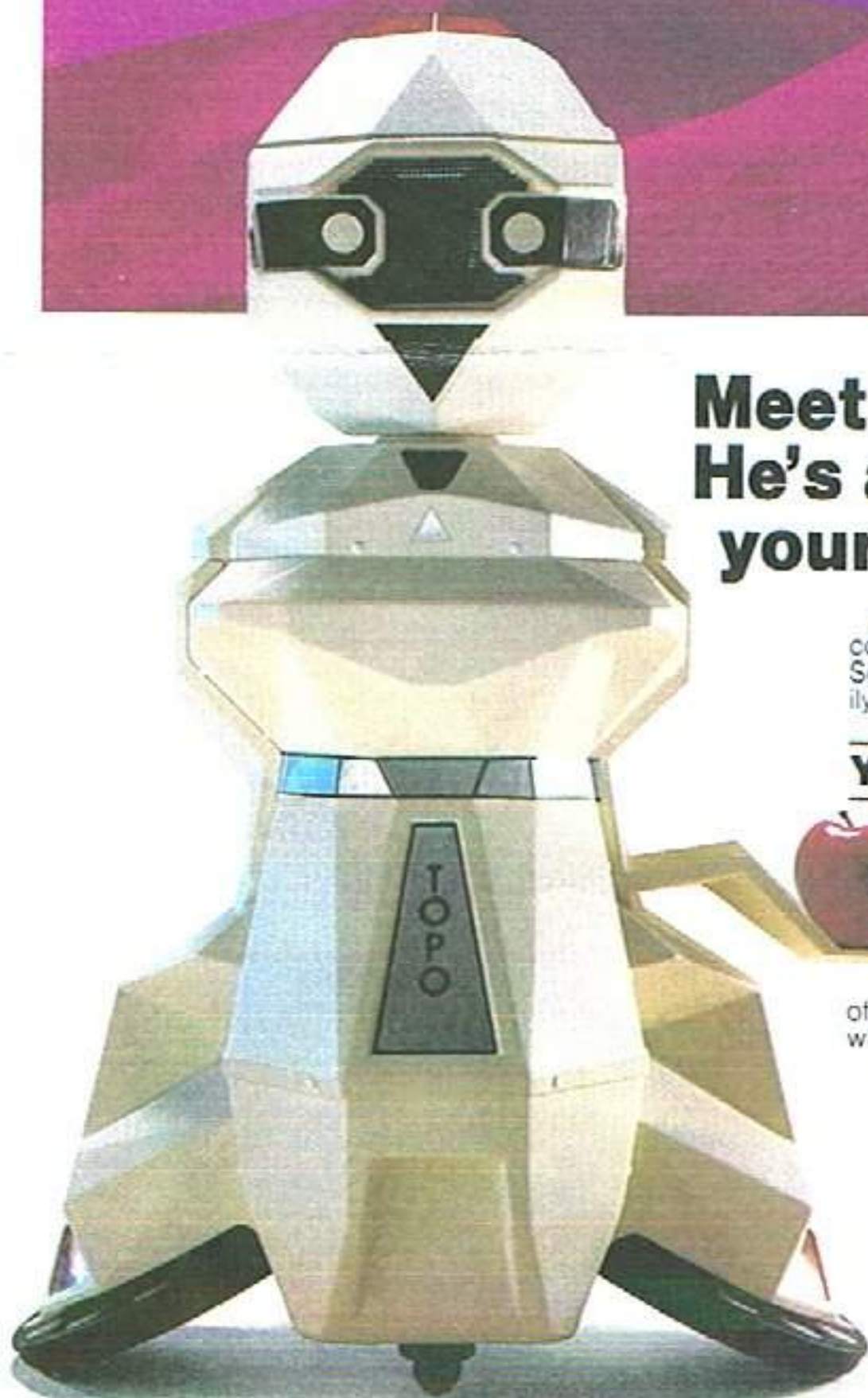
incredibly sophisticated Age of Androbotics.™ He's Topo.

You'll wonder how you ever got along without him.

You command: Topo performs.

Once you've acquainted Topo with his new home, a simple computer command or joystick movement will start him off and running. For instance, while you're in the kitchen, the

keyboard command "Topo to patio" will send him scurrying over a previously-memorized route to serve drinks to guests from his optional Androwagon™. A wireless infrared communications link relays information between Topo and your computer throughout your house.



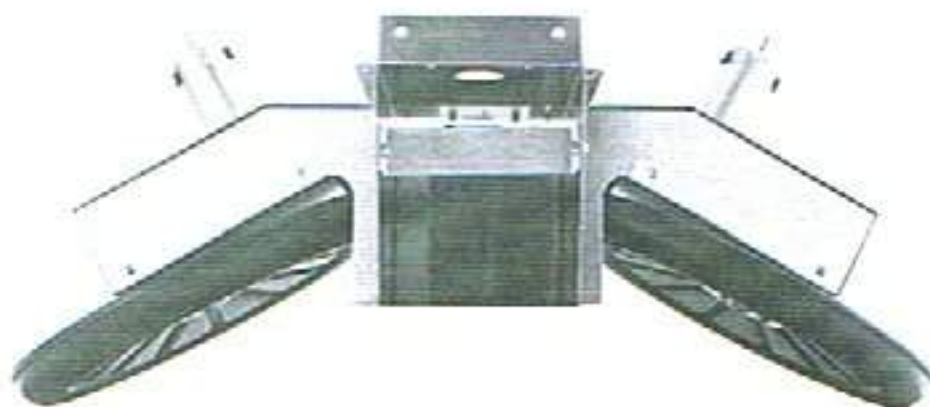


Topo lasts.

Even a cursory look reveals that Topo is no toy. Industrial grade batteries, machined steel shafts, high-torque motors and cast aluminum gear boxes assure structural integrity throughout.

Topo invites.

Topo invites you to be a participant in the most exciting, dynamic technological age in history. The Age of Androbotics™. Enjoy the fun of the future, today.



Topo talks.

With text-to-speech programming, you can direct Topo to speak in many languages with his optional programmable voice. Or make him sing by controlling the pitch, volume and speed of speech.

Topo remembers.

With Topo's optional "teach mode" you'll maneuver him around the room while the computer saves the list of commands being executed. Later, you can replay the action and voice routines and watch Topo do his stuff again and again. He doesn't forget!

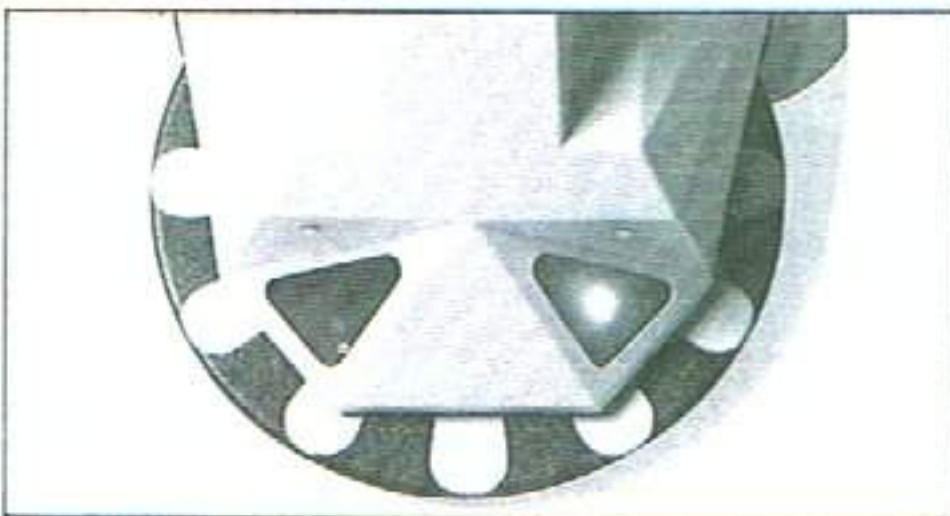
Topo grows.

You'll never get tired of Topo because Topo never stays the same. He keeps growing, expanding his capabilities, getting smarter with every new software package, getting more useful with every new hardware accessory. Your fun and your wonder will grow along with him!

Topo and Andromotion™

Topo enjoys a unique drive system that provides maximum stability and safety with optimum maneuverability and control. It's called Andromotion and it offers stability on just two independently driven

wheels. Andromotion gives Topo a unique gait. And he'll never tip over or run over an object in his path—even when going up or down a slight incline.



ANDROBOT™

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101 East Daggett Drive, San Jose, CA 95134, (408) BOB-TOPO

Topo specifications:

Size: 36.5" x 24"
Weight: 33 lbs.
Color: Ivory
Power: 120VAC for battery charger
Turning Radius: Turns in own width.
Materials: Body: ABS plastic. Steel base.
Speed: Approximately 2 feet per second.
Batteries: 2 Gel electrolyte, sealed rechargeable. LED indicates if batteries need recharging.
Battery Time: Three hours depending on use.
Maintenance: Battery charging from standard wall outlet. No other maintenance required.
Electronics: Onboard microprocessor communicates with computer via infrared signal.
Software: TopoForth™ diskette for use with Apple II is included.
Voice (optional): LPC-allophone-based text-to-speech system.
Control: By keyboard command, by program, by joystick or teach mode.
All product specifications and prices are subject to change without notice. If you wish additional product information, or software development data, your written inquiry to Androbot, Inc. is welcomed.
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embodies proprietary subject matter of Androbot, Inc.

MODEL NO. TPR-2000**DATE** December 1, 1983**APPROVAL** *FRQ***PAGE** 1**DESCRIPTION** Personal Robot as computer peripheral. Is expandable, has two-way communication link and extensive software capabilities.**REQUIRED EQUIPMENT**

- Apple IIe or IIplus with 48K
- Super Serial Card
- One Disk Drive

OPTIONAL EQUIPMENT

- Joystick

HARDWARE SUPPLIED★ **DIGITAL TOPO ROBOT**

- (3) 8031 microprocessors (two on-board, one in base communicator)
- Two-way infrared communication
 - Communication Range of up to 30 feet
 - Receives commands from base communicator and reports back on position
 - Automatic error detection and message acknowledgement
- "Card-cage expandability"
(8) card slots provided/(2) currently used as follows:
 - #1: motion control
 - #2: communication control and speech
 - #3-8: slots for sensor options now in evaluation and development
 - touch sensors (curb feelers)
 - ultrasonic sensors
 - infrared bar-code reader
 - speech recognition
 - vision
- Programmable speed/acceleration rate
- Movement specified in system of centimeters/degrees
- On-board text-to-speech synthesis — phonetically based "sound-building", direct from computer keyboard
- Phoneme-mode speech synthesis with adjustable: pitch (tone), length, emphasis (pitch vs. length) and volume
 - allows construction of accurate speech in any language
 - uses 48 standard phoneme symbols to build sounds
- (2) 12-volt industrial grade batteries
 - sealed casing for longer life
 - rechargeable with 24-volt wall-socket adapter (included)
 - Battery monitor section with automatic over/under voltage protection circuitry
- Utility Belt capability with connection site provided for sensor options

★ **BASE COMMUNICATOR**

- ½ duplex infrared remote controller
- Offers fast 9600-baud communication with computer and 1200-baud with TOPO
- Uses standard DB-25 connector and RS-232 interface
- 12-volt power adapter can be plugged into wall socket

★ **BODY STRUCTURE**

- Fire retardant material used throughout
- Easily removable for customer installation of sensor options
- Universal shoulder attaching mechanism for optional accessories
- FCC/UL/CSA approved

SUPPLIED SOFTWARE

★ **TOPOSOFT**

- User programs dedicated micro-controller in higher level language
- Forth-based system
- Built-in capability demonstration

★ **COMPLETE OWNERS MANUAL**

- Easy to understand sections on
 - movement
 - speech
 - program interface
 - applications

OPTIONAL SOFTWARE AND ACCESSORIES

★ **LOGO EXTENSION**

- Provides basic Logo routines for use with TOPO
- Excellent educational value due to 3-D representation of otherwise difficult concepts

★ **TOPOTEACH**

- Includes TopoSoft capabilities for one-disk operation
- Menu selection of commands on screen via joystick
- Graphics
- Teach mode: User programs TOPO's action via joystick. Routines may be recalled without need for reprogramming.

★ **ANDROWAGON**

- Carries up to 20 lbs. of books, toys, refreshments
- Easy on/off hitch mechanism

★ **UTILITY ATTACHMENTS**

- Fasten onto universal shoulder attaching mechanism
- Trays, holders, lights, etc., will all add home/office utility functions