

Ottawa Vintage Radio Club

January 12, 2021

Motorola Inc. |  **MOTOROLA**

1947

1955



MOTOROLA

1996



motorola

2011



motorola

RIP

Lloyd Kubis



- It is with heavy hearts that the family of Lloyd Kubis announce his sudden passing on January 2, 2022, at the NHS-St. Catharines Hospital. Lloyd, born October 1st, 1938, leaves behind his loving wife of 29 years, Suzanne, cherished children Robert and Wendy (Michael), loving grandchildren Melissa (Derek), Kayleigh, Robbie, great-grandson Nathan, and sister Betty (Don) Campbell. Lloyd was predeceased by his brothers John and Steve.
- At an early age, Lloyd developed a love for amateur radio that became a lifelong passion, communicating around the world under his various call signs: VE3ERQ and VE3NUU-B in Canada, 9V1ZI in Singapore, and VK3BGW in Australia. His adventurous spirit saw him at the helm of sail boats in Canada, a sea going trawler in Singapore and eventually power catamarans in Australia.
- Lloyd graduated from the University of Windsor with an Honours B.A.Sc., joined Motorola, and earned his Professional Engineer license.
- At Motorola, Lloyd was instrumental in progressing many technologies used in our daily lives such as cellular phones, pagers, and commercialized satellites. His lifelong career with the company took him all over the world establishing operations in Australia, developing major communication systems in Canada, managing government relations, and was promoted to MCEI Vice-President and Regional Director Government Relations - Asia Pacific, relocating to Singapore.

Motorola

- Company Overview
- Car Radio
- Radio
- TV
- Professional mobile Radio
- Studd YOU can buy!!!!

Motorola

Easy-to-use
player piano

Record player.
Wind-up or plug-in

Radio for your
home

Radio for your
motorcar

- Pianola → Victrola/Electrola → Radiola/Areola → Motorola
- One of the most innovative and influential electronics companies in all things related to mobility.
- Consumer Radio and TV (“Works in a Drawer”)
- Pioneers in cell-phone technology.
- Professional Mobile Radio (PMR) (police, fire, cab,) .
- Motorola Semiconductor: a giant in the industry.
- Military and aerospace, Iridium satellite radio.

Motorola

- 1928: Started as Galvin Manufacturing, Chicago. Paul & Joseph Galvin
- Started with battery eliminators.
- Bill Lear (of Lear jet fame), Elmer Wavering, and Howard Gates (Zenith) designed the first car radio for Galvin.
- The company sold its first Motorola branded car radio in 1930. They were not the first, but became quite successful.
- The Motorola brand name became so popular that Galvin Manufacturing Corporation later changed its name to "Motorola Inc".
- Later in '30's, they sold police communications ("public safety") equipment.

Motorola

Motorola

Motorola Inc.

Motorola Inc.

Motorola

M MOTOROLA

M MOTOROLA INC.

M MOTOROLA

M MOTOROLA

Motorola post war

- Consumer electronics
- WW2 “Walkie Talkie”
- First FM cab dispatch radios.
- Pagers.
- 1952: Motorola’s Toronto subsidiary for radio, TV, and public service radio.
- Early manufacturer of television receivers.

Motorola

Motorola

Motorola Inc.

Motorola Inc.

Motorola

M MOTOROLA

M MOTOROLA INC.

M MOTOROLA

M MOTOROLA

Cellular Radio Powerhouse

- April 3 1973: First mobile cell phone call (Martin Cooper, Motorola). However, the first network in North America was AMPS in 1983 (using Motorola and others tech)*
- Motorola provided the first AMPS phone DynaTAC 8000
- Motorola invented the flip-phone (MicroTAC, StarTAC , 1996, RAZR)
- First GSM (Global System for Mobile Communications, which was sponsored by ETSI) radio system in 1991.



* Japan and Scandinavia had systems that predated the North American AMPS system

**HAPPY
BIRTHDAY!
YOU WERE
COOL ONCE**



Motorola Semiconductors

- Motorola became a semiconductor power-house in the 1970's.
- First focusing on RF semiconductors.
- Later introducing the very popular MC6800 and 68000 microcomputers along with a complete line of peripherals and glue logic, which became a huge business for them.
- A dispute with Apple killed their Apple business and had them temporarily removed from the AIM alliance (Apple-IBM-Motorola).
- In the 1990's they were world-leaders with the best RF transistors (Laterally Diffused Metal Oxide Semiconductor = LDMOS) for cellular radio systems.

First From **MOTOROLA**



UHF MESA TRANSISTORS

the beginning of an exciting
new transistor family

2N700 LOW-NOISE HIGH-FREQUENCY AMPLIFIER

2N695 ULTRA HIGH-SPEED SWITCH

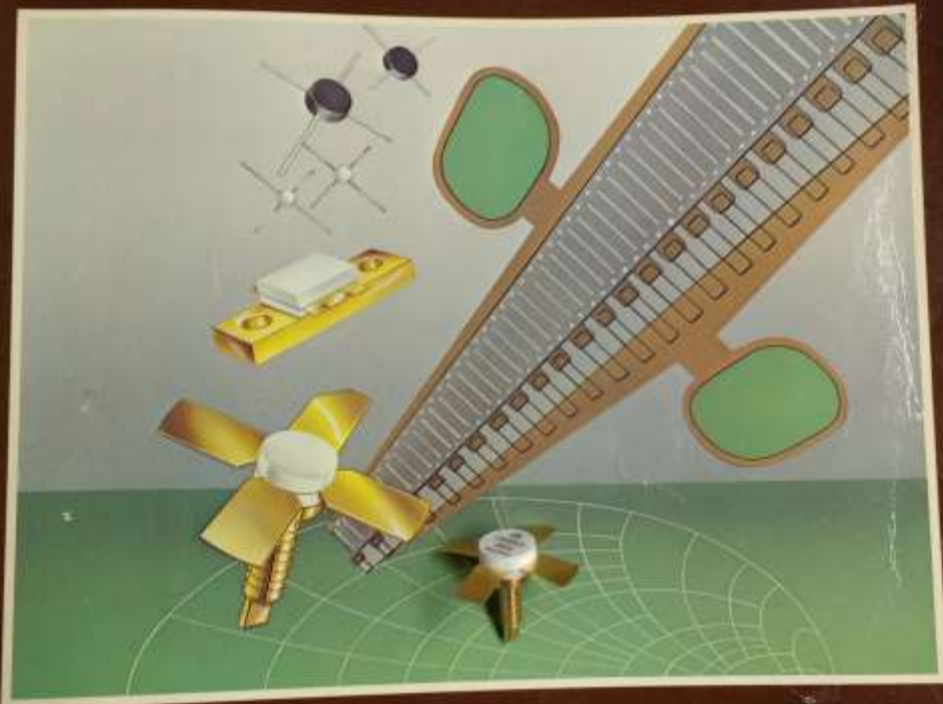
New Motorola Mesa Transistor, with can removed, is shown at half its true actual size.





MOTOROLA INC.

DL118
REV 1



RF DEVICE DATA

Circa 1983



Iridium

- Satellite phone system based on (initially) 77 LEO satellites (number of electrons in an Iridium atom). Launched with great fanfare in 1998.
- Financed by Motorola.
- Was bankrupt by 1999!
- Too expensive to operate, handset too large, poorly managed.
- Approx. \$4 Billion US was lost at the end of the fire sale.

6 sigma

- Motorola pioneered the “Six Sigma” strategy for process improvement.
- “Six Sigma strategies seek to improve manufacturing quality by identifying and removing the causes of defects and minimizing variability in manufacturing and business processes. This is done by using empirical and statistical quality management methods and by hiring people who serve as Six Sigma experts.”
- I bet many of us were told to “Do things the six-sigma way”, and rolled our eyes. In my field, it was seen as an excuse for excess process margin (barn-door specifications)

What happened?

- The “Quasar” television brand was sold to Matsushita (Panasonic) 1974
- Iridium (77 satellites) went bankrupt, forcing Motorola to divest semiconductor division to get cash.
- The semiconductor division was split apart and became ON semiconductor (1999) and Freescale semiconductor (2004) (now NXP).
- The division that did the famous cellular handsets became Motorola Mobility in 2011, which was sold to Google in 2012, then Lenovo in 2014 (Lenovo retained the Motorola Mobility name).
- The cell phone infrastructure division was sold to Nokia in 2011.
- In 2006, the automotive division was sold.
- What remains in “Motorola Solutions” is the public service sector (radios, dispatch, command centres, body camera, security).

Motorola Car Radios

Car Radios: quite a technical challenge!

- Rugged, stable, mustn't drift when subject to vibration.
- Not microphonic.
- Capable of operation over an extended temperature range.
- 6V poorly regulated supply.
- Adequate audio power for a noisy car.
- Easy to operate without distraction from the road.
- Compact enough to fit under a cramped dashboard.
- Sensitive with a limited-length antenna.
- Shielded from EMI caused by spark plugs and generator.

The New 1932 Improved--

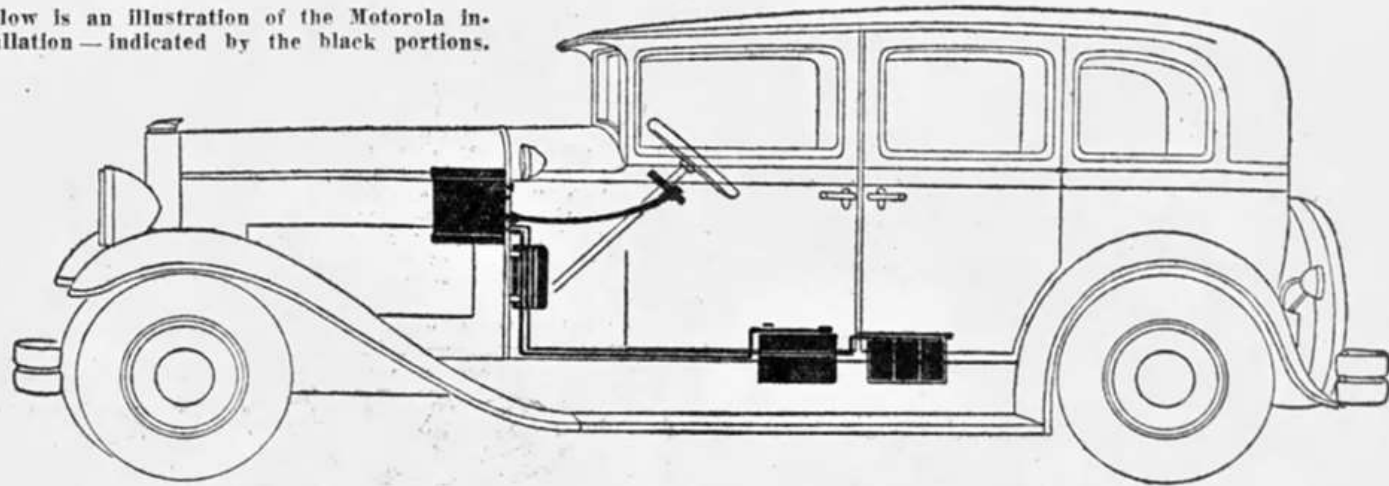
MOTOROLA

AUTO RADIO

The pleasing tone and ease of operation of Motorola in your car will give you motoring pleasures you have never before enjoyed.

IS HERE!

Below is an illustration of the Motorola installation—indicated by the black portions.



EASY TO INSTALL
on Any Car

**RIGHT AT
YOUR FINGER
TIPS**

Does Not Mar Your Car!
Can Be Removed Easily

MOTOROLA DELUXE

With Tubes, **\$69⁵⁰**
Less Installation
and Accessories.

Control panel is mounted on the steering post just below the wheel, making Motorola the safest auto radio ever devised.

*Ask about the
convenient terms!*

MOTOROLA STANDARD

With Tubes, **\$49⁵⁰**
Less Installation
and Accessories.



FITS and MATCHES
the car you're driving

Motorola

Model 9-24

**A 2-UNIT
SET AT
A 1-UNIT
PRICE!**



- 4-Station Push-Button Tuning
- 6 Loktal Compact-Type Tubes
- Separate, 8", Electro-Dynamic Speaker
- Full-Vision Illuminated Dial
- Installs Under Dash of Any Car
- Lowest Price in Motorola History

ONLY

\$24⁹⁵

EASY TERMS ARRANGED

*Tear Out and
Mail to:*

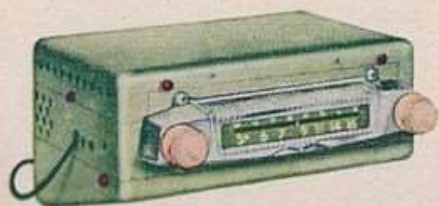
SOBOL BROS. BUDGET DEPT.

1313 5th Ave. (at 110th St.), New York, N. Y. UN 4-0010

If you live in Manhattan, Bronx, Brooklyn or Queens, and if your car is a 1932 to 1939 model, you may open a Sobol Bros. Easy Pay Plan Account by filling in and mailing this coupon.



The best part of your ride



ALL-IN-ONE ECONOMY UNIT
Compact, fits into instrument panel. Powerful self-contained speaker. Model 301, \$49.95*



FAMOUS "GOLDEN VOICE" PUSHBUTTON SET
Deluxe model, powerful separate speaker, rich studio tone and extra-long-range reception. Model 801, \$89.95*

**Take NEWS—MUSIC and LAUGHTER
wherever you drive!**

Riding is more relaxing when you have a Motorola radio in your car. No matter how far the miles may take you, it's easy to stay in touch with things . . . and *enjoy* your ride. Motorola's natural, brilliant tone is the finest you've ever heard. Powerful, too, you'll get stations sharp and clear when you're speeding along highways across the continent.

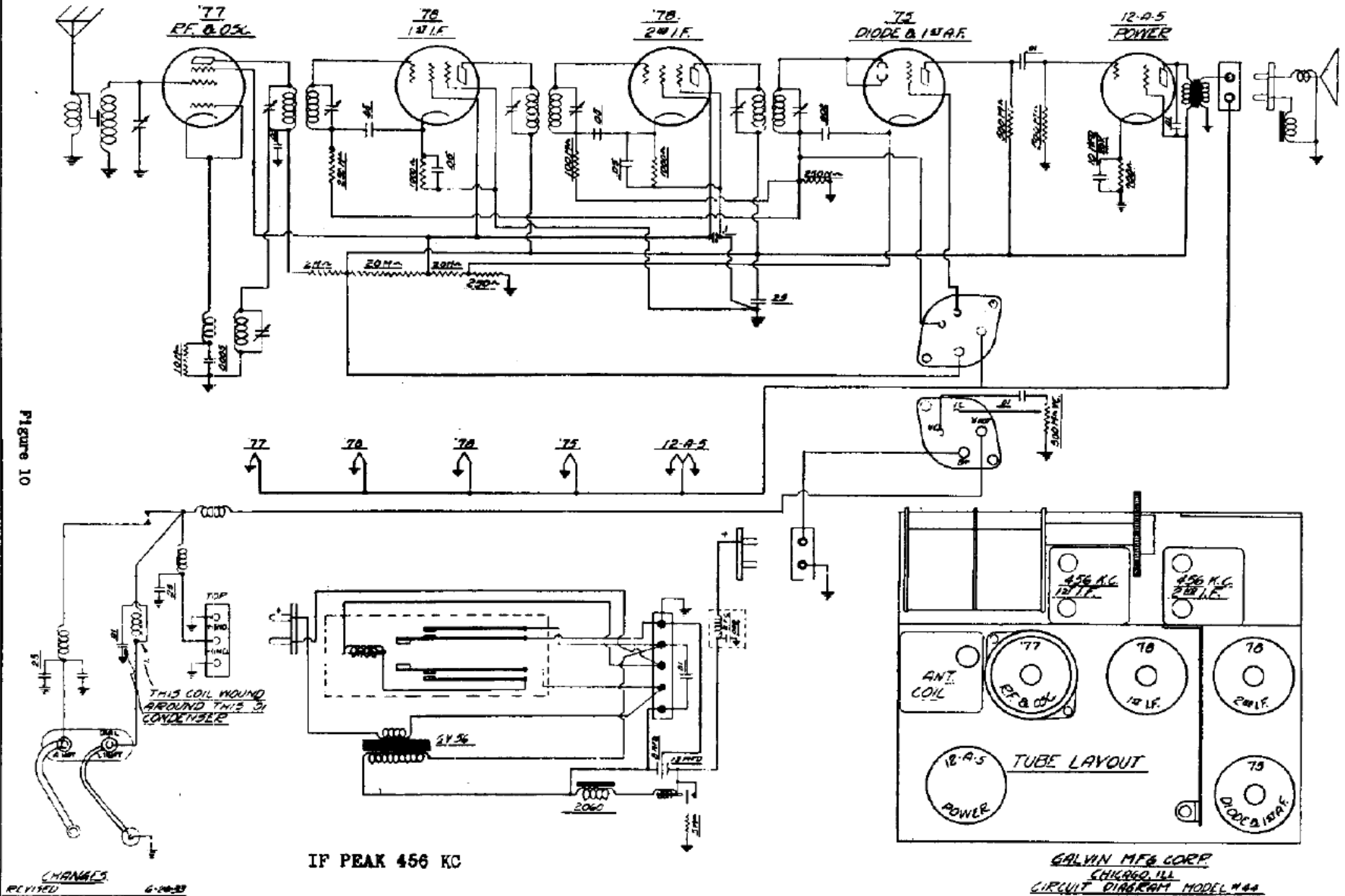
More to enjoy



Car radio that's come a long way. Our Motorola Golden Voice car radio, being enjoyed here, is the first all-transistor set in consumer mass cars. Thanks to its eight transistors, it takes less power than your dash lights. Needs no warm-up, either. Just touch one of the gold-plated pushbuttons, and music comes on instantly. Motorola car radios have come a long way since we made our first one, 30 years ago. They've become one of America's best-known brand names. But we're still promising to give you *More to enjoy* on the road!



Motorola Radio





Motorola
America's Finest
**AUTO
RADIO**



*Enjoy the Thrilling
New*
ACOUSTINATOR
Personal Preference Selector





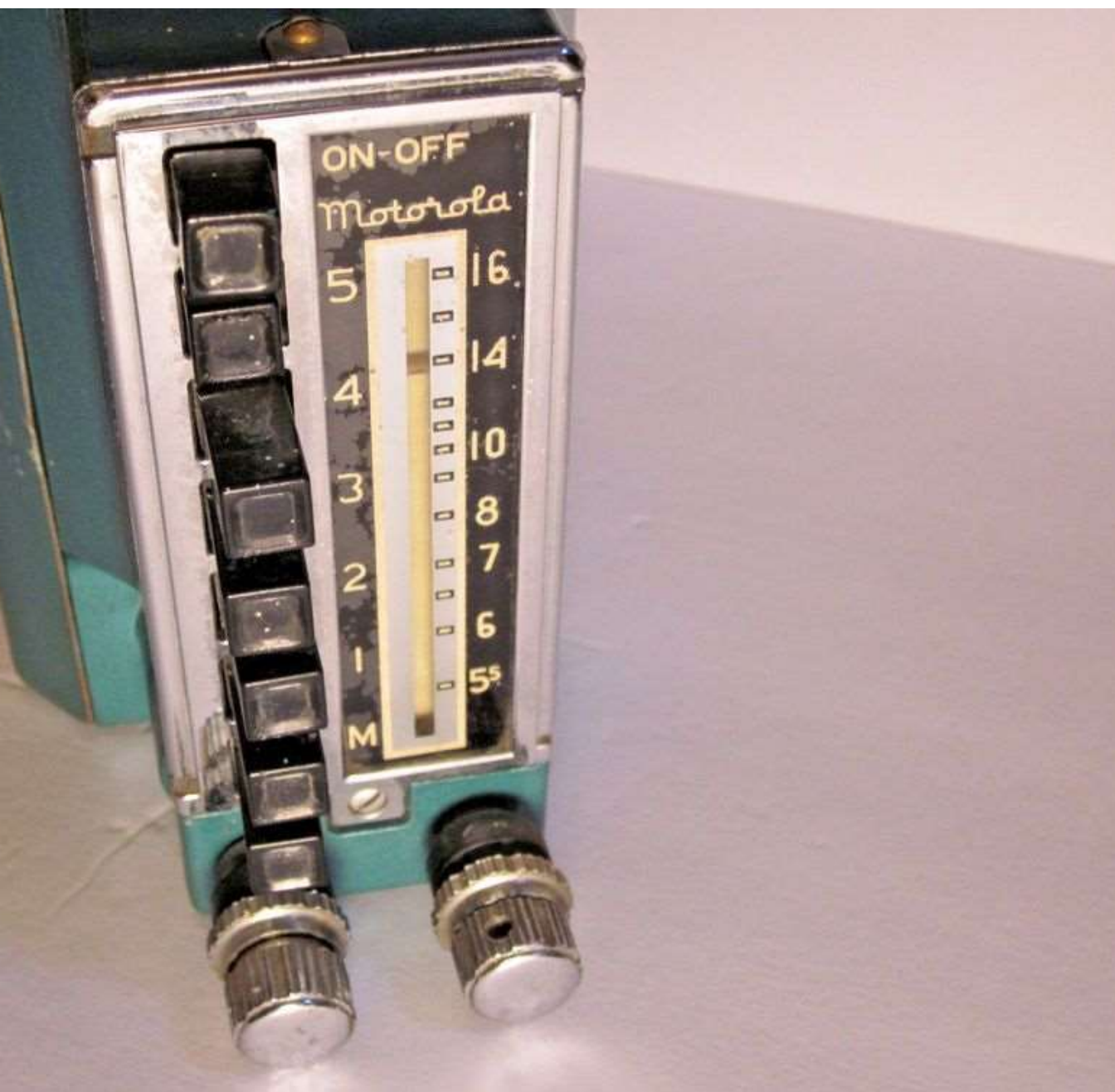
Motorola
MODEL
"EIGHT-SIXTY"

**PUSH-BUTTON
NETWORK
TUNING**

**PUSH A BUTTON...GET YOUR
FAVORITE STATION** *Automatically*









MOTOROLA

MODEL **BAKA7X**



'57 BUICK TRANSISTOR-POWERED AUTOMATIC SET

CUSTOM PUSHBUTTON RADIO—Easy pushbutton tuning for this new Motorola transistor-powered model . . . the radio that was tailored to fit the dash of the 1957 Buick! Flick of the finger sets or resets chrome trimmed pushbuttons to station of your choice. Handsome illuminated Dial Scale.

MOTOROLA-DESIGNED TRANSISTOR—From Motorola research laboratories comes the modern-miracle power transistor. This incredible dynamo of energy, from the company first to produce a transistor-powered car radio, lasts almost indefinitely, eliminates virtually all types of radio

noises, and is a wonder of economy (uses only a tiny amount of battery current)!

GOLDEN PLACIR CHASSIS—Brand new to car radio, Motorola's exclusive lifetime PLACIR chassis is your assurance against circuit burning out or shorting out. Won't wear out, either, unlike old-fashioned wire-and-solder circuits. Chassis has: 5 miniature tubes, power transistor, and 7 selective circuits. Iron core IF and diode coils for maximum efficiency.

EXCLUSIVE VOLUMATIC—Reduces "signal drop" when car passes over bridges, under viaducts, between tall buildings. This sensational in-

novation means simply that: if there's a signal at all, Volumatic will hold it to the pre-set level.

ELIMINOISE CIRCUIT — Another Motorola "first"! Cuts out power-line interference of all kinds. Annoying noise and hum caused by roadside high tension wires are banished.

RICH-TONE GOLDEN VOICE SPEAKER—Giant 6x9 inch external speaker produces hi-fi-like purity of tone. Heavy, permanent-magnet "heart". Acoustinator Tone Control makes possible clear, vibrant treble-to-bass tones.

DIMENSIONS:
9 $\frac{3}{8}$ " wide, 3 $\frac{3}{8}$ " high, 7 $\frac{1}{8}$ " deep

MODEL **BAKA6X**

ALSO AVAILABLE:

Model BKA6X, Buick Transistor-Powered Automatic Radio—specifically custom-fits '55, '56 Buicks . . . all other features same as model BKA7X, above.

DIMENSIONS: 9 $\frac{3}{8}$ " wide, 3 $\frac{3}{8}$ " high, 6 $\frac{3}{8}$ " deep

BOTH BKA7X and BKA6X FOR 12-VOLT SYSTEMS ONLY

Specifications subject to change without notice



MOTOROLA

MODEL **GV800**



THE FIRST ALL TRANSISTOR, PUSHBUTTON UNIVERSAL CAR RADIO . . .
WITH LOWEST BATTERY DRAIN AND HIGHEST POWER OUTPUT OF ANY CAR RADIO!
FEATURES 8 TRANSISTOR CHASSIS, PUSH-PULL CIRCUITRY, ADJUSTABLE SHAFT CENTERS

ALL TRANSISTOR CHASSIS—The most exciting development in car radio history! And Motorola, the world's largest independent manufacturer of car radios, is "first" again. Powered for a lifetime by 8 mighty transistors to bring you the best sounding, most economical operating car radio on the market today! Transistors can't wear out or burn out ever! . . . and operate on a mere trickle of current. Battery drain is cut to an almost unbelievable minimum! Vibrator noises are banished! The cooler operation due to the transistors extends the life of the other elements dramatically. No warm-up time necessary—just turn on the radio and the program is right there. Three microvolt sensitivity for more enjoyment. Full 8 watt power output for hi-fi-like sound reproduction!

PUSH-PULL CIRCUITRY—The push-pull audio output stage amplifies the signal and supplies more power to the speaker with less distortion. The result—richer, clearer hi-fi-like sound for listening pleasure. Push-pull circuitry actually supplies twice the power as the usual single-end type used in most radios.

ELIMINOISE CIRCUIT—Virtually eliminates roadside power line hum and noise. There's no jamming—you get crisp, clear reception.

GIANT GOLDEN VOICE SPEAKER—A full 6x9 inch external speaker to deliver hi-fi-like sound. Heavy permanent magnet heart. Acoustinator tone control for full bass-to-treble tones.

DIMENSIONS—9" wide, 3 $\frac{3}{8}$ " high, 5 $\frac{1}{2}$ " deep

FOR 12 VOLT SYSTEMS ONLY

Specifications subject to change without notice

FITS MOST CARS—Designed by expert Motorola engineers to fit right into the dash of most any car on the market . . . without long, bothersome installations. Adjustable shaft centers, another Motorola-introduced extra quality feature, make this easy universal installation possible. Just adjust the shafts to the proper opening and install. AND as a finishing touch to this peerless car radio, the pushbuttons, escutcheon and control knobs are plated with sparkling, luxurious 24-carat gold. This rich, lustrous trim adds true elegance to any interior.

Model **GV800** . . .
UNIVERSAL MODEL
ALL TRANSISTOR
PUSHBUTTON RADIO



MOTOROLA

MODEL **CTA7X**

MODEL **CTM57X**

**TRANSISTOR-POWERED
PUSHBUTTON RADIO
FOR 1957 CHEVROLET**

MODEL CTA7X... For the owners of 1957 Chevrolets. Custom designed in every detail to blend into the dash. Tops in pushbutton convenience. Powered by lifetime Transistor PLAcir Chassis. Volumatic, Elimnoise Circuitry for more listening pleasure while driving. Insist on Motorola Car Radios designed for the 1957 Chevrolet for the finest styling and performance.



**TRANSISTOR-POWERED
MANUAL TUNING RADIO
FOR 1957 CHEVROLET**

MODEL CTM57X... A brand new car radio with manual tuning for the 1957 Chevrolet. A power packed unit with so many quality features. Just look at this list of features that set the standard for all car radios... Volumatic, Transistor-powered Chassis, big Golden Voice Speaker, Elimnoise Circuitry and a sensible low price.

Motorola Radio

Motorola

America's Finest

Radio

AUTHORIZED SERVICE

From Alan Bird:

- I have attached a few photos of my 1933'ish Motorola S-10 Lazy Boy radio.
- It is a chairside with a wired remote control box.
- Original finish and working including the rare Tun-A-Lite indicator bulb.







MOTOROLA

Motorola
PORTABLES

Prices slightly higher in South and West. Prices sub

Glamour
Motorola
Jr." Bl
Plays in
ther-eff
black o
gold tr
batterie

No Fi
A "lu
price.
puts a
while
with
ed fa
AC/1



**More radio pleasure
for less money-**

* **Hoppy holiday**—with your Motorola Portable to sing you a love song or bring you laughter and thrills—*wherever* you go! Take it to the beach, in a plane or speeding train—its voice will be rich and full where others often fail. In no other portable can you match the outstanding value of the Motorola Model 48L11 (above.) Big volume and glorious tone are masterfully engineered into a marvelously compact two-tone plastic cabinet. Built-in loop antenna for long reach and added power. Four tubes plus rectifier. Superheterodyne. Tuned RF section. Battery operation. **\$1995**

MODEL 58L11—AS ABOVE, BUT AC-DC OR BATTERY OPERATION **\$2995**

MOTOROLA
PORTABLES

AMERICA'S FAVORITE PERSONAL PORTABLES

The Motorola PLAYMATE JR.—internationally famous glamour-baby of personal portables. Tiny as a throwie camera, but with the tone and power of sets many times its size. All metal cabinet with handsome maroon "crackle" finish. Antenna in lid. AC-DC or battery operated. **\$3995**

The Motorola 48L11 — now all through and breathtakingly beautiful! All controls in thumb's reach while carrying. Exclusive Dial-in-Handle Cabinet is rich fabric permanently laminated with clear durable plastic. Outperforms them all! **\$4995** in lid. AC-DC or battery operation.

MOTOROLA TELEVISION
Don't buy a television receiver until you see the new Motorola Clearer, brighter pictures and wonderful sound. Amazingly simple to operate. Your BEST BUY at only \$179.95 (Aerial and installation additional)

Look in your Classified Telephone Book for the name of your nearest Motorola Dealer

MOTOROLA INC., CHICAGO 51, ILLINOIS

New Motorola 6-TRANSISTOR Shirt-Pocket Radios



A new Motorola radio miniaturized to fit a shirt pocket for purse!—yet with the power and sound you'd expect from a larger set. Powerful 6-transistor chassis pinpoints stations—holds them strong and steady. Motorola-designed 2½" Golden Voice®

speaker with new tone delivers rich, clear low-crisp highs. Battery life up to 100 hours at normal volume level—2½ times longer than in previous models this size. Give it a look and listen at your Motorola Dealer. It's worth the trip.



NO PRESET CONTROLS for effortless tuning—easy when set is in the pocket.



RECEIVING LENS with toneless tuning makes station selection precise—easy.



BUILT-IN CARRYING STAND allows radio to stand upright on table top.



CUSTOM CARRYING CASE and earphone included, optional slightly extra.



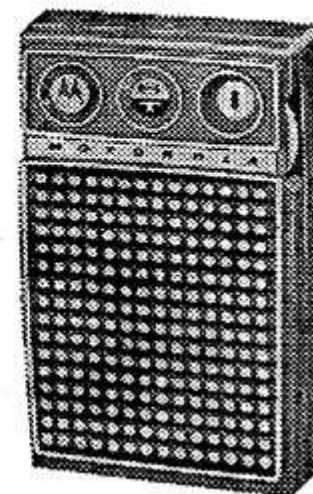
MOTOROLA

Very Ultimate in Design and Sound for shirt-pocket radios. See Motorola dealer for details. Price of brown case, Model 6-15, not including shipping.

Groovy Motorola 6 transistor radio

688

Lively shirt pocket portable goes anywhere! 2 stage audio amplification for rich tone. 2½" Golden Voice speaker. Dial window. Earphone, 9V battery, case.











Motorola and TV

- Early in TV industry.
- Early use of solid-state electronics in a TV.
- Claim to have the first truly rectangular colour TV.
- Introduced Quasar “Works in a Drawer”
(making it easy to fix ← implying that it needed to be fixed a lot!)
- Quasar was sold to Matsushita (Panasonic) in 1974.

Early Motorola pocket TV (not marketed)



1. Constructed by De Loss Tanner.
2. 1-1/8 inch picture tube.
3. Earphone lead doubles as antenna.
4. Total volume: 13 cubic inches.
5. Circuits, exclusive of power supply, occupies 1.17 cubic inches.
6. Weight: Less than one pound.
7. Power Source: Four mercury penlight cells.
8. Power Consumption: 1 1/2 watts (About half to tube filament).
9. Total of active components: 29 transistors and 14 diodes.
10. Power supply provides: eleven volts, one hundred volts, two hundred seventy five volts, twelve hundred volts, and three thousand volts.
11. Sensitivity: Comparable to standard portable receiver.
12. Operates on channel five.
13. The three-transistor tuner includes an R.F. amplifier.
14. The set has a three-stage video i.f. amplifier, two stage video amplifier, ratio detector intercarrier phase detector and automatic gain control.
15. Electrostatic sweep circuits provide two hundred volt sawtooth to each deflection plate.

Any channel you want , as long as you want channel 5

NOW you can afford the finest
TELEVISION



Television: Consulats.
Big screen shows brilliant,
sensu pueri on all chan-
nels. Gorgeous Furiosa
typhoid culture.
Model YK105



Burgess Yuhle Model.
Shore women, crystal-
clear partners. Hand
rolled; Fumeroe dried
cigarette.
Model VT 205



4-in-1 Console. Televisions, Automatic Photographs for "Long Playing" records, Automatic Photographs for standard records, FM and AM radio, record storage. Furniture styled cabinet. Model VV101



Proved in thousands of homes
Television's Greatest Value!

Wait no longer—*now you can afford the new, exciting miracle of television in your own home!* Here is television's clearest, brightest, smoothest picture on a direct-view screen—accompanied by incomparable Motorola Golden Voice sound engineered for lightness (weight) and simplicity. Simplified controls make it so easy to use that customers call it the *fastest*—*most convenient* TV.



Motorola
GOLDEN EYE VIEW
TELEVISION



YOUR Motorola DEALER INVITES YOU ...
TO THE YEAR'S MOST EXCITING TELEVISION-RADIO SHOW

ANOTHER TERRIFIC TV FIRST FOR MOTOROLA
New budget-priced table model with 8½ in. BROADVIEW screen. Brighter-than-ever pictures thru new Hi-Voltage circuit. Simplified controls with TARGET TUNING. MODEL 9VT1.

THE GLAMOUR-BABY OF PERSONAL PORTABLES
 Motorola's famous "Playmate Jr." BIG
 volume . . . rich tone. Plays instantly, anywhere
 . . . AC/DC or battery operation. Black or
 maroon leather-effect case . . . bronze-gold
 trim. MODEL 5A9

STANDOUT VALUE • 10" BROADVIEW SCREEN
... gives BIGGER picture without distortion. **BILT-IN-TENNA** ... no installation in "good signal" areas. **TARGET TUNING** locks picture and sound "on-the-beam." **MODEL 10VT24**

TINY TABLE RADIO • 6 "DECORATOR" COLORS
Compact, yet delivers full, rich tone. Built-in "Aerovane" loop antenna. Selectivity that knifes thru local stations to bring in distant ones.
Low priced, too! MODEL 59R11

FM-AM TABLE RADIO • SUPERB!
FM rich and clear and true-to-life . . . kept constantly in tune by exclusive "radar-type" FM tuner. "Sweep Station" dial for easy tuning. Golden Voice AM performance. MODEL 79XM21



FULL-SIZE CONSOLE • SENSATIONAL "BUY"
All wood mahogany cabinet, 10 in. BROADVIEW screen. Automatic Gain Control guarantees "NO FADE" pictures. Only 2 dual controls. An unequalled television console value. MODEL 10VK22

BIG SCREEN TELEVISION AT ITS BEST!
12½ in. BROADVIEW screen gives over
25% more picture area than standard rectangular
screen . . . without distortion. Value-packed
with new TV features. Hand rubbed mahogany
or limed oak cabinet. Model: 12VK11



Motorola

See your classified directory for your nearest Motorola dealer. Prices and specifications subject to change without notice.

MANUFACTURERS OF TELEVISION • RADIO FOR HOME AND CAR • FM 2-WAY RADIO COMMUNICATIONS SYSTEMS

OWN A MOTOROLA...AND YOU KNOW YOU OWN THE BEST

Motorola TV

BEAUTIFUL NEW 16-in. TV-RADIO- PHONOGRAPH COMBINATION

This gorgeous "18th Century" off-the-floor combination will lend thrilling new *beauty* to your fine home. 16-inch rectangular pictures... "Performance Tested" chassis... 2 simple controls and Bilt-in-Antenna. FM/AM radio and 3-speed phonograph. See it today... the price is surprisingly low. MODEL 17F4, Mahogany.

*See your classified directory
for the name of your
nearest Motorola dealer.*

specifications subject to change without notice



THERE'S A MOTOROLA TO FIT YOUR BUDGET • YOUR HOME • YOUR FAMILY



*The gift
nobody could give
before*

First big-screen all-transistor portable **you** don't have to plug in

This is the new Motorola portable—discovery of all TV is made one gift idea at a time.

It plays television shows in a special manner on ordinary home consoles—without the need for special equipment. Simply roll out the TV and plug it into any standard 110-volt AC outlet. No need for special wiring.

The result of this new concept and technology is the first portable TV that has been designed to be a portable. It's the first that is truly portable. It's the first that is truly portable.

Motorola has built the first portable TV that is designed to be a portable. It's the first that is truly portable. It's the first that is truly portable.



Motorola has built the first portable TV that is designed to be a portable. It's the first that is truly portable. It's the first that is truly portable.

MOTOROLA

here's the **GIFT** that sings, talks and lives for years...

No gift ever so completely matched the spirit of Christmas as the miraculous MOTOROLA table model V-11 TELEVISION receiver. Here in the wonder of wonderful News, sports, drama, comedy...

...in your living room as it happens... with famous people in famous places! The Motorola Golden View picture is so bright, crisp and sharp! The receiver is so light (only 15 lbs.) you can move it from room to room and installation is quick and easy. You can have it in time for the big Christmas Holiday programs, and at a price all can afford. **\$189.95**

Model V-11



Motorola
TELEVISION
and GIFT RADIOS



Table Radio-Phonograph
"Dancing Queen" design
features 10" or 12" or 14" or 16" screen
Model V-11



Table Radio-Phonograph
"Dancing Queen" design
features 10" or 12" or 14" or 16" screen
Model V-11



Table Radio-Phonograph
"Dancing Queen" design
features 10" or 12" or 14" or 16" screen
Model V-11



Table Radio-Phonograph
"Dancing Queen" design
features 10" or 12" or 14" or 16" screen
Model V-11



Table Radio-Phonograph
"Dancing Queen" design
features 10" or 12" or 14" or 16" screen
Model V-11

OWN A
Motorola
AND YOU KNOW YOU
OWN THE BEST

Motorola, leader in television, shows how TV can mean better behavior at home and better marks in school!



Money, make TV again! (Hearst) (Hill): He says "Money, make TV again!"—with serious-looking words by way of warning...and out of context's hell. And finally, just one of many TV networks: "Money, make TV again!"



Don't be nervous about growing! The simple rule "Don't grow, or you'll die" has helped the growers of the world. It's true. The world's greatest crop has been grown in a very small area. The New York Times says the growers of the world are the only ones who are growing the world's food. The only ones who are growing the world's food are the growers of the world. The only ones who are growing the world's food are the growers of the world.



Will technology strengthen family ties? *Millennials*, perhaps the most technologically adept generation in the history of the Internet, are leading the family together in many good, some controversial ways in the home. Parents are embracing children's "TV dad" and a life variety of electronic playthings.

[illegible]

Motorola

TELEVISION



"Next year we'll turn the TV set on first!"

For greater television enjoyment

NEW! Arcsustainer Tone Control—provides fully variable tone range as you prefer, by greater listening pleasure.

MODEL 21K2—Big 30-inch screen, high-gain half-duplex mode in popular contemporary styling, modern trim. Built-in controls. Model 21K2B—In Limited Color . . . \$299.95



No Glare Annoyance. Exclusive Melinex Glass Guard directs outside light away from the screen... eliminates up to 99% of reflected glare interference from the picture.



Exclusive New Area Selecter Switch. Operation switch locates power for "fringe" reception. New Concentrated Power Channel restores true reception to areas of "dead end" of town!



For the picture of the year, it's the lady of the year

Motorola TV

PROVIDE MORE DEPENDABLE. From actual service records of leading dealers, coast to coast, comes positive proof there are far less service calls with Motorola TV — year assurance of fast, more dependable performance.

18 BEAUTIFUL MODELS TO CHOOSE FROM . . . AS LOW AS \$199.95
Prices and specifications subject to change without notice. Prices slightly higher South and West. Some models One Year Warranty. Contact for details.

Surpassing ALL

PRESENT DAY STANDARDS OF TELEVISION

Introducing the Motorola Masterpiece Series

Here you see pictured the first television receivers which may, without exaggeration, be called objects of art. Incorporating eleven exclusive new inventions and improvements, these three Motorola sets deliver a picture that we believe surpasses in clarity and brilliance anything you have yet seen. Tuning of both sound and picture is so simple that a very young child can operate it. The cabinets are peerless examples of modern and traditional furniture design and craftsmanship. Production of these fine receivers will necessarily be limited. A Motorola dealer will arrange for a complete demonstration without obligation.



THE VAN DYCK
Television Console with 16" Broadview Screen, Golden Voice Sound.



THE RAEBURN
Television Console with 12 1/2" Broadview Screen, Golden Voice Sound.



THE GAINSBOROUGH—16" Broadview Screen, Golden Voice FM-AM Radio, Multi-Play Phonograph for all three record types.



Motorola

Masterpiece Series • Television by

Motorola designs and manufactures a complete line of television receivers in table models, consoles and phonograph combinations ...with picture tube from 7 to 16 inches.

Consult your classified telephone directory for name of nearby Motorola dealer.
MOTOROLA INC., 4545 AUGUSTA BLVD., CHICAGO 51, ILLINOIS

MANUFACTURERS OF TELEVISION • RADIO FOR HOME AND CAR • FM 2-WAY RADIO COMMUNICATIONS SYSTEMS

Early American outside
modern Motorola inside



MOTOROLA
new leader in the lively art of electronics

Here's one TV that
looks good even when
it's off. And, it has
a full year guarantee*.

It takes subtle detailing to give a television set the authentic Early American look. This 1964 Motorola® TV has it. Turned spindle legs, simulated spice drawers with antiqued pulls, and "splash board" back piece.

Inside, everything is strictly up-to-date. The power transformer chassis is hand-wired, precision crafted with

modern hand and dip soldering for circuit connections of high reliability. A special picture optimizer control helps provide a pleasing picture even in fringe areas.

*Every tube and part is covered by Motorola's one year guarantee with free exchange or repair of any component proven defective in normal use (arranged through selling dealer, labor extra).

Your Motorola dealer will be happy to demonstrate this superbly crafted 23-inch console (overall diag. tube meas.: 28 1/2 in. picture viewing area). Ask to see Model 23K121.

While you're at it, ask to see the freshest idea in clock radios today—the new Motorola Tandem. It's a clock radio ... a clock ... it's a portable radio!



MOTOROLA

*Guarantee subject to change without notice. TV is dealer and only responsibility.

More to enjoy

...in sight and sound



To each his own Motorola. Dad's brilliant Console has famous Golden Satellite® Remote Control that lets him turn set on-off, change channels, and mute sound instantly, without getting up from his favorite chair. Small fry are carried away by Portable TV with exclusive Magic Mist Aerosol Screen. So many other features to help make a brighter, clearer, sharper picture. You get More to enjoy in so many ways.



More to enjoy... with many available features: Superphone High Fidelity, Stereo, Direct Tuning, and more. Motorola's Golden Tube Sentry® Series... the best dependability there is. And Motorola's Golden Tube Sentry® Series... the best dependability there is. And Motorola's Golden Tube Sentry® Series... the best dependability there is.



Motorola

World's Largest Electronic Equipment Manufacturer



More to enjoy

...in sight and sound



TV's working fine... even though our un-moving kind isn't. This sharp, crisp picture of '50 Motorola' TV invites anyone to a no-down... for hours on end. Seasons are inside. Exclusive Golden Tube Sentry® Series and Golden 'M' Tubes produce the longest-lived, most reliable TV ever. Make possible Motorola's Golden Guarantee - full-year guarantee on all tubes and parts plus 3 years on Tube Sentry unit. Long-term dependability means More to Enjoy. For more years, from Motorola.



Motorola

World's Largest Electronic Equipment Manufacturer



More to enjoy... Motorola has the best. Super High Definition. 40 lines of picture. 100% quality. See our premium picture after watching Motorola's Golden Tube Sentry Series. In Motorola's Best Deal, in California, Michigan, New York, and Florida.







Portable











Full-color TV in a full-size console—made with handsome woods, finished rich mahogany. Designed in the traditional manner, but with clean, modern lines. Colorcasts are seen exactly as the camera takes them — every color right in place — because of the Colorola® Tuner, the Power Drive Color Chassis and many other features developed by Motorola color research.



The Motorola Color TV console with glare-down/sound-up design

MOTOROLA RECTANGULAR

COLOR TV



A black and white photograph of a vintage television set. The front door is open, revealing the internal components, including the vacuum tube sockets and wiring. The television has a dark, possibly wood-grain or painted, cabinet. The door is hinged on the right side and is swung open to the left. The interior of the door shows a control panel with several knobs and switches. The overall appearance is that of a mid-20th-century electronic device.

RESEARCH—A new study by researchers at the University of California, San Diego, suggests that the use of a computerized system to monitor and control the environment of a hospital room can reduce the risk of infection. The study, published in the *Journal of Hospital Medicine*, found that the use of a computerized system to monitor and control the environment of a hospital room can reduce the risk of infection. The study, published in the *Journal of Hospital Medicine*, found that the use of a computerized system to monitor and control the environment of a hospital room can reduce the risk of infection.

Admiring Color IV with the snake is a dance. Look into it...at those Mercedes lenses

Country	Year	Population (millions)	Urban population (millions)	Urban population (%)	Population density (per sq km)	Population density (per sq mile)
Algeria	1980	11.0	5.0	45.5	10.0	26.0
Algeria	1985	12.0	5.5	45.8	10.0	26.0
Algeria	1990	13.0	6.0	46.2	10.0	26.0
Algeria	1995	14.0	6.5	46.4	10.0	26.0
Algeria	2000	15.0	7.0	46.7	10.0	26.0
Algeria	2005	16.0	7.5	46.9	10.0	26.0
Algeria	2010	17.0	8.0	47.1	10.0	26.0
Algeria	2015	18.0	8.5	47.2	10.0	26.0
Algeria	2020	19.0	9.0	47.4	10.0	26.0
Algeria	2025	20.0	9.5	47.5	10.0	26.0
Algeria	2030	21.0	10.0	47.6	10.0	26.0
Algeria	2035	22.0	10.5	47.7	10.0	26.0
Algeria	2040	23.0	11.0	47.8	10.0	26.0
Algeria	2045	24.0	11.5	47.9	10.0	26.0
Algeria	2050	25.0	12.0	48.0	10.0	26.0
Algeria	2055	26.0	12.5	48.1	10.0	26.0
Algeria	2060	27.0	13.0	48.1	10.0	26.0
Algeria	2065	28.0	13.5	48.2	10.0	26.0
Algeria	2070	29.0	14.0	48.3	10.0	26.0
Algeria	2075	30.0	14.5	48.3	10.0	26.0
Algeria	2080	31.0	15.0	48.4	10.0	26.0
Algeria	2085	32.0	15.5	48.4	10.0	26.0
Algeria	2090	33.0	16.0	48.5	10.0	26.0
Algeria	2095	34.0	16.5	48.5	10.0	26.0
Algeria	2100	35.0	17.0	48.6	10.0	26.0
Algeria	2105	36.0	17.5	48.6	10.0	26.0
Algeria	2110	37.0	18.0	48.7	10.0	26.0
Algeria	2115	38.0	18.5	48.7	10.0	26.0
Algeria	2120	39.0	19.0	48.7	10.0	26.0
Algeria	2125	40.0	19.5	48.8	10.0	26.0
Algeria	2130	41.0	20.0	48.8	10.0	26.0
Algeria	2135	42.0	20.5	48.8	10.0	26.0
Algeria	2140	43.0	21.0	48.8	10.0	26.0
Algeria	2145	44.0	21.5	48.9	10.0	26.0
Algeria	2150	45.0	22.0	48.9	10.0	26.0
Algeria	2155	46.0	22.5	48.9	10.0	26.0
Algeria	2160	47.0	23.0	49.0	10.0	26.0
Algeria	2165	48.0	23.5	49.0	10.0	26.0
Algeria	2170	49.0	24.0	49.0	10.0	26.0
Algeria	2175	50.0	24.5	49.0	10.0	26.0
Algeria	2180	51.0	25.0	49.0	10.0	26.0
Algeria	2185	52.0	25.5	49.0	10.0	26.0
Algeria	2190	53.0	26.0	49.1	10.0	26.0
Algeria	2195	54.0	26.5	49.1	10.0	26.0
Algeria	2200	55.0	27.0	49.1	10.0	26.0
Algeria	2205	56.0	27.5	49.1	10.0	26.0
Algeria	2210	57.0	28.0	49.1	10.0	26.0
Algeria	2215	58.0	28.5	49.1	10.0	26.0
Algeria	2220	59.0	29.0	49.1	10.0	26.0
Algeria	2225	60.0	29.5	49.2	10.0	26.0
Algeria	2230	61.0	30.0	49.2	10.0	26.0
Algeria	2235	62.0	30.5	49.2	10.0	26.0
Algeria	2240	63.0	31.0	49.2	10.0	26.0
Algeria	2245	64.0	31.5	49.2	10.0	26.0
Algeria	2250	65.0	32.0	49.2	10.0	26.0
Algeria	2255	66.0	32.5	49.3	10.0	26.0
Algeria	2260	67.0	33.0	49.3	10.0	26.0
Algeria	2265	68.0	33.5	49.3	10.0	26.0
Algeria	2270	69.0	34.0	49.3	10.0	26.0
Algeria	2275	70.0	34.5	49.3	10.0	26.0
Algeria	2280	71.0	35.0	49.3	10.0	26.0
Algeria	2285	72.0	35.5	49.3	10.0	26.0
Algeria	2290	73.0	36.0	49.3	10.0	26.0
Algeria	2295	74.0	36.5	49.3	10.0	26.0
Algeria	2300	75.0	37.0	49.3	10.0	26.0
Algeria	2305	76.0	37.5	49.3	10.0	26.0
Algeria	2310	77.0	38.0	49.3	10.0	26.0
Algeria	2315	78.0	38.5	49.3	10.0	26.0
Algeria	2320	79.0	39.0	49.3	10.0	26.0
Algeria	2325	80.0	39.5	49.4	10.0	26.0
Algeria	2330	81.0	40.0	49.4	10.0	26.0
Algeria	2335	82.0	40.5	49.4	10.0	26.0
Algeria	2340	83.0	41.0	49.4	10.0	26.0
Algeria	2345	84.0	41.5	49.4	10.0	26.0
Algeria	2350	85.0	42.0	49.4	10.0	26.0
Algeria	2355	86.0	42.5	49.4	10.0	26.0
Algeria	2360	87.0	43.0	49.4	10.0	26.0
Algeria	2365	88.0	43.5	49.4	10.0	26.0
Algeria	2370	89.0	44.0	49.4	10.0	26.0
Algeria	2375	90.0	44.5	49.4	10.0	26.0
Algeria	2380	91.0	45.0	49.4	10.0	26.0
Algeria	2385	92.0	45.5	49.4	10.0	26.0
Algeria	2390	93.0	46.0	49.4	10.0	26.0
Algeria	2395	94.0	46.5	49.4	10.0	26.0
Algeria	2400	95.0	47.0	49.4	10.0	26.0
Algeria	2405	96.0	47.5	49.4	10.0	26.0
Algeria	2410	97.0	48.0	49.4	10.0	26.0
Algeria	2415	98.0	48.5	49.4	10.0	26.0
Algeria	2420	99.0	49.0	49.4	10.0	26.0
Algeria	2425	100.0	49.5	49.4	10.0	26.0
Algeria	2430	101.0	50.0	49.4	10.0	26.0
Algeria	2435	102.0	50.5	49.4	10.0	26.0
Algeria	2440	103.0	51.0	49.4	10.0	26.0
Algeria	2445	104.0	51.5	49.4	10.0	26.0
Algeria	2450	105.0	52.0	49.4	10.0	26.0
Algeria	2455	106.0	52.5	49.4	10.0	26.0
Algeria	2460	107.0	53.0	49.4	10.0	26.0
Algeria	2465	108.0	53.5	49.4	10.0	26.0
Algeria	2470	109.0	54.0	49.4	10.0	26.0
Algeria	2475	110.0	54.5	49.4	10.0	26.0
Algeria	2480	111.0	55.0	49.4	10.0	26.0
Algeria	2485	112.0	55.5	49.4	10.0	26.0
Algeria	2490	113.0	56.0	49.4	10.0	26.0
Algeria	2495	114.0	56.5	49.4	10.0	26.0
Algeria	2500	115.0	57.0	49.4	10.0	26.0
Algeria	2505	116.0	57.5	49.4	10.0	26.0
Algeria	2510	117.0	58.0	49.4	10.0	26.0
Algeria	2515	118.0	58.5	49.4	10.0	26.0
Algeria	2520	119.0	59.0	49.4	10.0	26.0
Algeria	2525	120.0	59.5	49.4	10.0	26.0
Algeria	2530	121.0	60.0	49.4	10.0	26.0
Algeria	2535	122.0	60.5	49.4	10.0	26.0
Algeria	2540	123.0	61.0	49.4	10.0	26.0
Algeria	2545	124.0	61.5	49.4	10.0	26.0
Algeria	2550	125.0	62.0	49.4	10.0	26.0
Algeria	2555	126.0	62.5	49.4	10.0	26.0
Algeria	2560	127.0	63.0	49.4	10.0	26.0
Algeria	2565	128.0	63.5	49.4	10.0	26.0
Algeria	2570	129.0	64.0	49.4	10.0	26.0
Algeria	2575	130.0	64.5	49.4	10.0	26.0
Algeria	2580	131.0	65.0	49.4	10.0	26.0
Algeria	2585	132.0	65.5	49.4	10.0	26.0
Algeria	2590	133.0	66.0	49.4	10.0	26.0
Algeria	2595	134.0	66.5	49.4	10.0	26.0
Algeria	2600	135.0	67.0	49.4	10.0	26.0
Algeria	2605	136.0	67.5	49.4	10.0	26.0
Algeria	2610	137.0	68.0	49.4	10.0	26.0
Algeria	2615	138.0	68.5	49.4	10.0	26.0
Algeria	2620	139.0	69.0	49.4	10.0	26.0
Algeria	2625	140.0	69.5	49.4	10.0	26.0
Algeria	2630	141.0	70.0	49.4	10.0	26.0
Algeria	2635	142.0	70.5	49.4	10.0	26.0
Algeria	2640	143.0	71.0	49.4	10.0	26.0
Algeria	2645	144.0	71.5	49.4	10.0	26.0
Algeria	2650	145.0	72.0	49.4	10.0	26.0
Algeria	2655	146.0	72.5	49.4	10.0	26.0
Algeria	2660	147.0	73.0	49.4	10.0	26.0
Algeria	2665	148.0	73.5	49.4	10.0	26.0
Algeria	2670	149.0	74.0	49.4	10.0	26.0
Algeria	2675	150.0	74.5	49.4	10.0	26.0
Algeria	2680	151.0	75.0	49.4	10.0	26.0
Algeria	2685	152.0	75.5	49.4	10.0	26.0
Algeria	2690	153.0	76.0	49.4	10.0	26.0
Algeria	2695	154.0	76.5	49.4	10.0	26.0
Algeria	2700	155.0	77.0	49.4	10.0	26.0
Algeria	2705	156.0	77.5	49.4	10.0	26.0
Algeria	2710	157.0	78.0	49.4	10.0	26.0
Algeria	2715	158.0	78.5	49.4	10.0	26.0
Algeria	2720	159.0	79.0	49.4	10.0	26.0
Algeria	2725	160.0	79.5	49.4	10.0	26.0
Algeria	2730	161.0	80.0	49.4	10.0	26.0
Algeria	2735	162.0	80.5	49.4	10.0	26.0
Algeria	2740	163.0	81.0	49.4	10.0	26.0
Algeria	2745	164.0	81.5	49.4	10.0	26.0
Algeria	2750	165.0	82.0	49.4	10.0	26.0
Algeria	2755	166.0	82.5	49.4	10.0	26.0
Algeria	2760	167.0	83.0	49.4	10.0	26.0
Algeria	2765	168.0	83.5	49.4	10.0	26.0
Algeria	2770	169.0	84.0	49.4	10.0	26.0
Algeria	2775	170.0	84.5	49.4	10.0	26.0
Algeria	2780	171.0	85.0	49.4	10.0	26.0
Algeria	2785	172.0	85.5	49.4	10.0	26.0
Algeria	2790	173.0	86.0	49.4	10.0	26.0
Algeria	2795	174.0	86.5	49.4	10.0	26.0
Algeria	2800	175.0	87.0	49.4	10.0	26.0
Algeria	2805	176.0	87.5	49.4	10.0	26.0
Algeria	2810	177.0	88.0	49.4	10.0	26.0
Algeria	2815	178.0	88.5	49.4	10.0	26.0
Algeria	2820	179.0	89.0	49.4	10.0	26.0
Algeria	2825	180.0	89.5	49.4	10.0	26.0
Algeria	2830	181.0	90.0	49.4	10.0	26.0
Algeria	2835	182.0	90.5	49.4	10.0	26.0
Algeria	2840	183.0	91.0	49.4	10.0	26.0
Algeria	2845	184.0	91.5	49.4	10.0	26.0
Algeria	2850	185.0	92.0	49.4	10.0	26.0
Algeria	2855	186.0	92.5	49.4	10.0	26.0
Algeria	2860	187.0	93.0	49.4	10.0	26.0
Algeria	2865	188.0	93.5	49.4	10.0	26.0
Algeria	2870	189.0	94.0	49.4	10.0	26.0
Algeria	2875	190.0	94.5	49.4	10.0	26.0
Algeria	2880	191.0	95.0	49.4	10.0	26.0
Algeria	2885	192.0	95.5	49.4	10.0	26.0
Algeria	2890	193.0	96.0	49.4	10.0	26.0
Algeria	2895	194.0	96.5	49.4	10.0	26.0
Algeria	2900	195.0	97.0	49.4	10.0	26.0
Algeria	2905					



Read about Motorola Quasar—Color TV with the works in a drawer. 10 tubeless, plug-in modules give a kind of stay-at-home reliability other sets just can't offer.



University of Wisconsin
College of Agricultural and Mechanical Engineering
Box 48 • Stevens Point, WI 54481

Circle 17 on Reader Service Card

and the nearby landscape are quite different, too. They are the same distance from controlling the flood and able to exert flood-protection control over the Elbe. But the German coastline is a flat landscape, a broad



These other individuals, less sensitive to others' discomforts, may have been more likely to have been involved in the accident, for example.

There are many different methods of advertising and advertising can be selling the way those that allow to continue and after this are many ways to advertise in every other country.

David J. Lang, *University of Illinois at Chicago*

4. *How much information is available to the public about the company's environmental performance?*

It is important to note that the results of this study are based on a cross-sectional design. Therefore, the causal relationship between the variables cannot be established. Future research should use a longitudinal design to investigate the relationship between the variables over time.

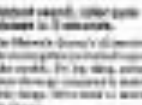
© 2000 Blackwell Science Ltd *Journal of Internal Medicine* 247: 103–110

Free Download

The 1990s also saw the rise of the "new" TV series, which often featured a diverse cast of characters and explored social issues. Examples include *Doogie Howser, M.D.*, *Ellen*, and *The X-Files*.



...the way you can, by using different ...



See also 100-101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 91

• **How to use:** Apply to the affected area 2-3 times daily. For best results, use after bathing and drying the skin. Do not use on broken or irritated skin. For more information, see the Important Information about this medicine on page 2.

© 2000 Blackwell Science Ltd, *Journal of Internal Medicine* 247: 395–401

^a *Chlamydomonas reinhardtii* was grown in a continuous culture at stationary state. The cells were harvested by centrifugation at 1000g for 5 min and washed with distilled water.

...the 1990s, when the U.S. government began to support the search for a cure for AIDS. The U.S. government began to support the search for a cure for AIDS.

Small but significant differences were found between the two groups in the following variables: age, sex, and the number of children.

1. *Die Bedeutung der Sprache*
 2. *Die Bedeutung der Sprache*
 3. *Die Bedeutung der Sprache*



All-transistor Color TV with the works in a drawer. Look into it at Old City's No. 1 Dealer

Quaker Headquarters offers you the best deal in our 21 year history on a new Motorola Color TV. Compare our quality & service ... you'll be here.



NO MONEY DOWN
NO CREDIT CHECK
1-800-451-7269

WE HONESTLY BELIEVE
NO ONE ANYWHERE
CAN SELL YOU A
NEW MOTOROLA TV
FOR LESS!

SAVE on MOTOROLA . . . Right Now During Our 21st Anniversary Sale!



Why don't most 19" diagonal television sets cost as much as this one?

Because the Quasar II is a special television set. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.

The Quasar II is a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.

And now you can have the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.

Under the Quasar II, you can have the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.

The Quasar II is a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.

The Quasar II is a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.

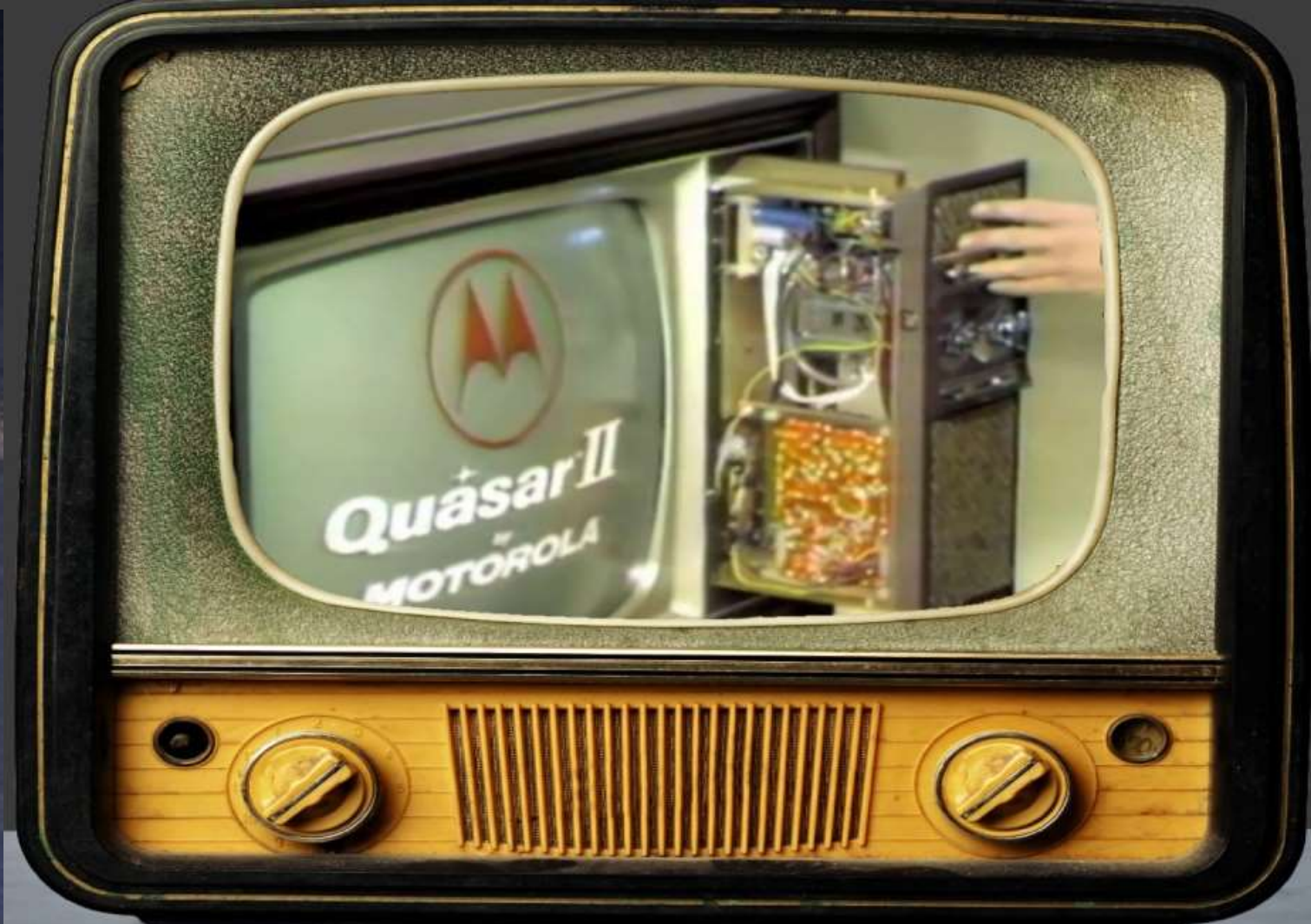
The Quasar II is a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.

The Quasar II is a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds. It's a television set that's been designed to give you the best of both worlds.



Quasar
makes television special again.

Quasar II is a registered trademark of Motorola Inc.



VINTAGE TELEVISION COMMERCIALS©

A bit about Professional Mobile Radio

Florida's SENTINELS OF SAFETY



POWERFUL STATEWIDE PROTECTION

WITH **Motorola**
F-M 3-Way

Radiotelephone System

Florida's long shoreline presents unusual police protection problems. Instant, efficient and economical protection is vital. Now with 17 Central Headquarter Stations equipped with Motorola F-M 3-way radio and 93 patrol cars with two way radiotelephone service, Florida has all the protection it needs.

Instant communication with any patrol

car in any part of the State is obtained with needless cruising cut to a minimum, conserving personnel, tires, gas and automotive parts and repairs. Let us show you how your State, County or City can also obtain a complete Motorola police radiotelephone system designed precisely to solve *your* problem. Our installations are standard in many states.

Write or phone for full information today

GALVIN MFG. CORPORATION · CHICAGO 51.

YOU CAN GET The Widely Used
and Acclaimed



Motorola
F-M POLICE RADIO

MOTOROLA Communications Equipment is available in all 48 Representative Bodies who are serving Defense Plants and Areas. Delivery is made through the Defense Supplies Corporation Radio Receiver Dept.—and yet, will

enable you to move up in the professional of the kind of 3-Way Radio Systems which many important states and cities have selected after exhaustive tests, in which all other available equipment was given due consideration.



MOTOROLA's mobile system has been widely recognized in California and Michigan... complete systems that provide untended radio communication efficiency and flexibility. Motorola Electrical Engineers have pioneered every important feature of Mobile and Portable

F-M and AM emergency radiotelephone radio sets—and when the war broke out ready with equipment that was up-to-date with government, state, county and municipal service. If you need equipment it will be in your mind to investigate and consider Motorola NOW!



THE ARMY-NAVY "E" is awarded for assistance in the production of Communications Equipment for America's Armed Forces

Motorola Radio Communication Systems

Designed and Engineered to Fit Special Needs

GALVIN MFG. CORPORATION · CHICAGO

NEW

Motorola FM
DISPATCHER

P.S. - PERSONAL DELIVERY

397⁵⁰

COMPETITION
None known.

The **BRUNNEN** **FLIGHT** measures depth and bubble information continuously and is easily quickly designed for use in training pools. They are built of stainless steel, with nickel-plated brass for battery boxes and highest reliability. The **FLIGHT** is a **FLIGHT** computer with a programmable microcontroller designed for a wide range of applications. The **FLIGHT** computer can be used for a broad and precise collection of data and offers the option of storage and data transfer. **FLIGHT** is a **FLIGHT** computer.

Some new innovations have been introduced within commercial food waste composting in the last year, opening today's markets to the food waste management options of choice. One of these is "anaerobic" digestion, the process of breaking down food waste in the absence of oxygen. This process produces a gas called methane, which can be used to generate electricity or heat. The process also produces a liquid fertilizer that can be used on crops. The process is highly efficient and can handle a wide range of food waste, including meat and bones. It is also a highly scalable process, making it a viable option for large-scale food waste management.

WILLIAM J. HARRIS is a professor of psychology at the University of Illinois at Chicago. He is also a past president of the American Psychological Association.

The *Journal of*
LABOR ECONOMICS

There are two types of "cognitive" representations: *qualitative* or *symbolic* and *quantitative* or *numerical*. Qualitative representations are those that are used to represent the qualitative aspects of a system, such as the presence or absence of a feature, the direction of a flow, or the relative magnitude of a quantity. Quantitative representations are those that are used to represent the quantitative aspects of a system, such as the magnitude of a quantity, the rate of change of a quantity, or the probability of an event.

Motorola Inc

[illegible]

REMOTE
CONTROL

Clamps on Instrument Panel

6 Tubes
6" Permanent Magnet
DYNAMIC SPEAKER

6 Tubes: 6" Permanent Magnet Dynamic Speaker, resonated to voice frequencies and also padding circuits that exclude extraneous noises occurring in the higher sound frequencies: Newly improved patented "Magic Eliminator" insures motor-noise-free reception — Positively NO SPARK PLUG SUPPRESSORS necessary: Improved Superheterodyne Circuit: Low Current Consumption: Plug-In Chassis easily removed for bench servicing: Automatic Volume Control: Variable Sensitivity Control to introduce squelch in extremely noisy locations: Full-Wave Interrupter Type Vibrator with large contacts for giving long and continuous service: "Series-Fed" Antenna System — adjustable for peak performance when using either roof aerial or under-car aerial: Crystal Control — that insures reception whenever the slightest signal is picked up by car aerial: Mounts on "Jiffy" Bracket: Remote Control Panel with Red Indicating Light.

SPECIFICATIONS

TUBES: 2 Type 78—1 Type 6-A7—1 Type 75—1 Type 41
Type OZ-4.
SPEAKER: 6" external permanent magnet dynamic type.
Adjustable speaker mounting bolt.
CONTROL: Mounts on instrument panel.
MAGIC ELIMINODE
VIBRATOR: Interrupter type
RECTIFIER: OZ-4 cold cathode—requires no filament current.
SIZE: 6¼" High—7" Deep—10¾" Long.
TUNING RANGE: Single frequency controlled by crystal ground to frequency specified between 1570 KC and 2800 KC.
CURRENT DRAIN: 4 amps at 6 volts (see Curve Chart 1).
SENSITIVITY: 1 microwatt at 1 watt (see Curve Chart 3).
I. F. FREQUENCY: 262 KC.
SELECTIVITY: (See Curve Chart 4)
SET MOUNTING: Jiffy bracket—entire set easily removed for servicing.
CENTER SPLIT HOUSING: Removal of front cover gives access to all tubes and vibrator.
PLUG-IN CHASSIS: The chassis may be completely removed from housing for bench servicing.

EAR-LEVEL SPEAKERS

If so desired, an Ear-Level Electro Dynamic Speaker may be used instead of the conventional Permanent Magnet Dynamic Speaker in the following cars:

1936 Buick
1936 Chevrolet
1935-36-37 Ford
1936 Graham
1936-37 Lafayette

1936-37 Nash
1936 Oldsmobile
1937 Packard
1936 Pontiac
1935-36-37 Studebaker



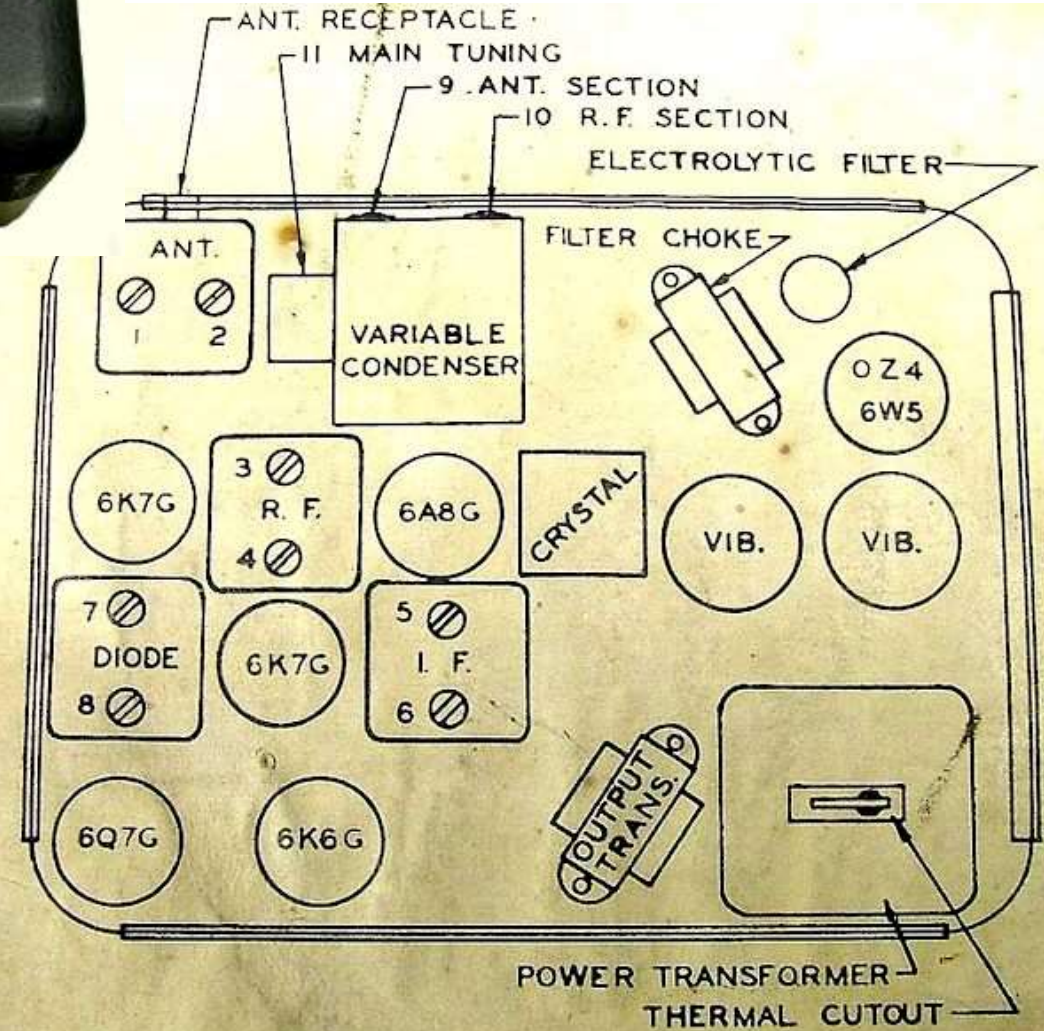
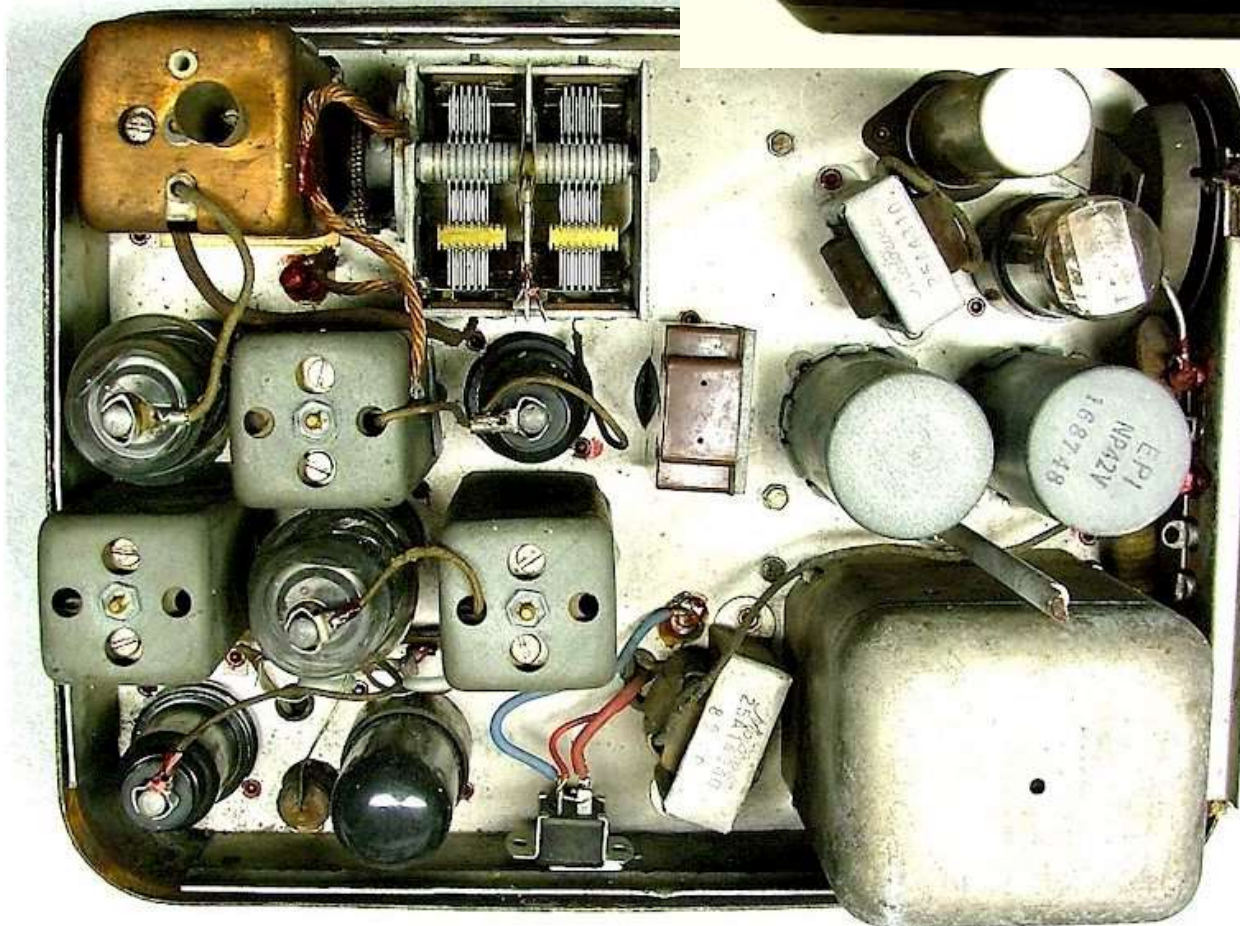
**MOTOROLA DESIGNS SPECIAL
2-WAY RADIO FOR FIREMEN,
POLICE AND U.S. SIGNAL CORPS**

Typical of the special design problems which are continually being solved by Motorola Communication Engineers are the above illustrations of a complete 2-Way Radio Transmitter-Receiver weighing only 7½ lbs. for field use by Firemen, Police and Army Personnel.

16

See <http://www.wb6nvh.com/Moto/Motadata.htm>

Police Cruiser



PART NO. 54X14371

P-69-12



Motorola Radios For Sale at our
Next Auction!

Lot 728: Motorola MP56L portable AC/battery set.



Lot 754: Motorola Model 5P31A
Bat/AC Cabinet good, Red + covering



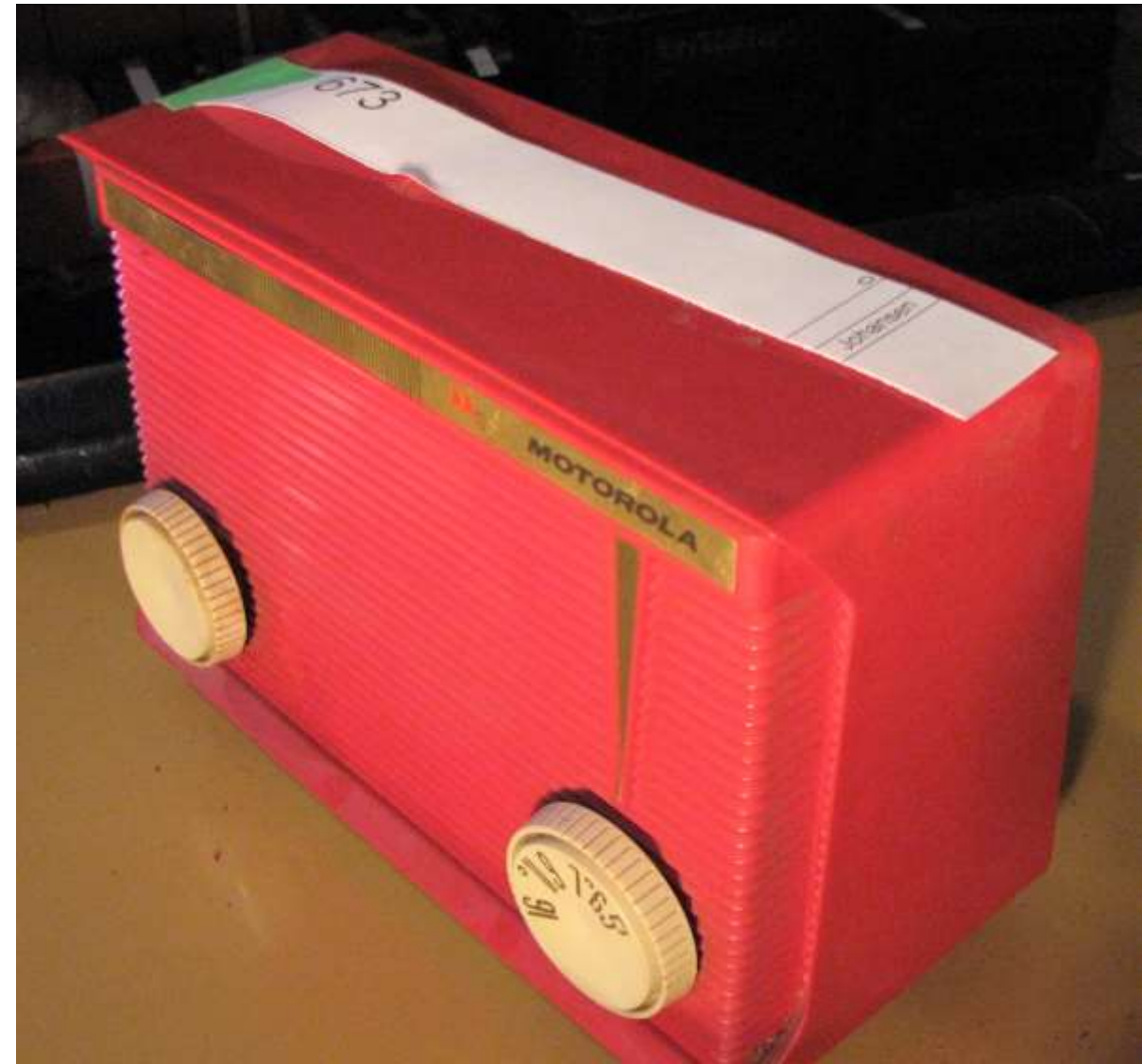
Lot 669: Motorola model 55B1 battery/AC set



Lot 671: motorola
HL329 clock radio



Lot 673: Motorola model A1R 32 red radio



Lot 679: Motorola unk model, small red radio

