How the World Changed
60 years after graduation.

As seen by the High School class of 1904
compared to the class of 1964.

1904

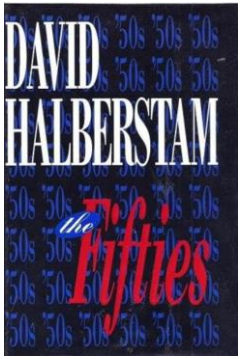
1964

by George Gillow
2024

Introduction

This year, 2024, will be 60 years since I graduated from high school in 1964. It occurred to me that in the year 1964, high school classes of 1904 were having their 60-year reunions.

This presentation is about the changes **the class of 1904 witnessed in 60 years** compared **to the class of 1964 in 60 years**.



It could take tens of thousands of pages to show everything that happened. David Halberstam's book, *The Fifties,* is 800 pages long and it does not cover everything that happened in the 1950s.

So, I narrowed down topics to automobiles, air travel, radio and television, motion pictures, the home (mostly appliances), computers and cell phones.

Class of 1904: Cars in 60 Years

1904 Oldsmobile

1912 Cadillac. First Self Starter.

The CAR
THAT HAS NO CRANK

1929 Chevrolet

1939 Chevrolet

1957 Chevrolet

1964 Chevrolet

Motorola started large scale manufacturing of car radios in 1930. (Motorola: "**motor"** for motor vehicle and "**ola**" from Victrola.) Cars in 1964 had features like AM/FM radios, electric windows and air conditioning.

Class of 1964: Cars in 60 Years

1966 Ford Mustang

1976 Oldsmobile

1990 Chevrolet

2000 Chevrolet

2014 Chevrolet

2023 Chevrolet

The 1966 Mustang had a tape deck. The amount of electronics installed in cars greatly increased in 60 years. Today there are a lot of computer chips throughout automobiles and there are many electric vehicles.

Class of 1904: Air Travel

1914

- The world's first regularly scheduled airline started in 1914.
- The airline was known as the **St. Petersburg–Tampa Airboat Line**.
- The Benoist airboat could **carry one (1) passenger.** Speed: 64 mph.

1925

Speed: 132 mph. Travel across the USA was airplane by day and Pullman train by night.

Ford Trimotor Interior 11 Passengers.

Class of 1904: Air Travel

Speed 211 mph – Altitude 24K feet

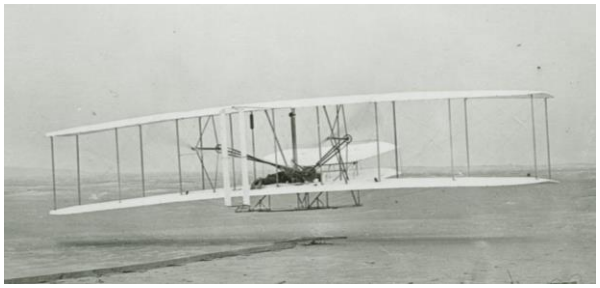
DC-3: 21-32 passengers

Speed 355 mph – Altitude 25K feet

DC-7 Interior. 70-90 passengers. Note formal attire. Girls always wore dresses and boys sometimes wore ties.

Class of 1904: Air Travel

- The flight of the Wright Brothers in 1903 occurred a few months before the high school class of 1904 graduated.



- A number of 1904 graduates traveled on jet airliners to their 60th reunion.

The 707 jet airliner began flights in 1958.

Class of 1904: Air Travel

Speed 556 mph – Altitude 42K feet

Speed: 540 mph – Altitude 42K feet

Economy meal 1950s-1990s No additional cost.

Class of 1964: Air Travel

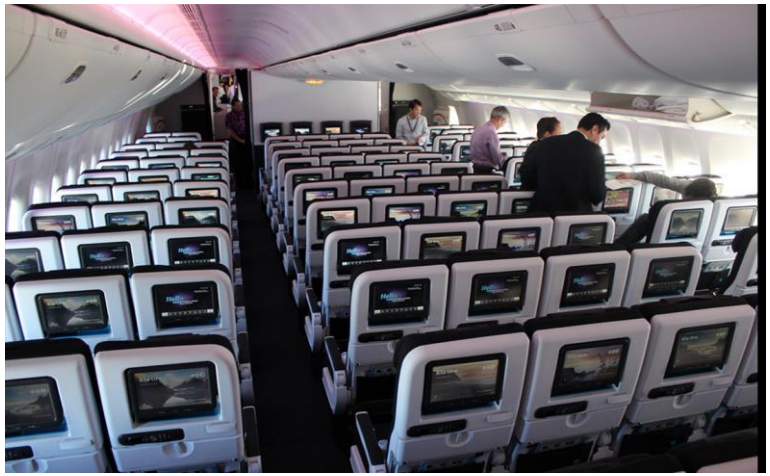
The Boeing 737 of 1967 was a smaller version of the 707. It had only two engines and carried 115 passengers. The speed was 525. Its maximum altitude 37K ft.

Boeing 747: Speed 564 mph – Altitude 41K feet – 366 passengers

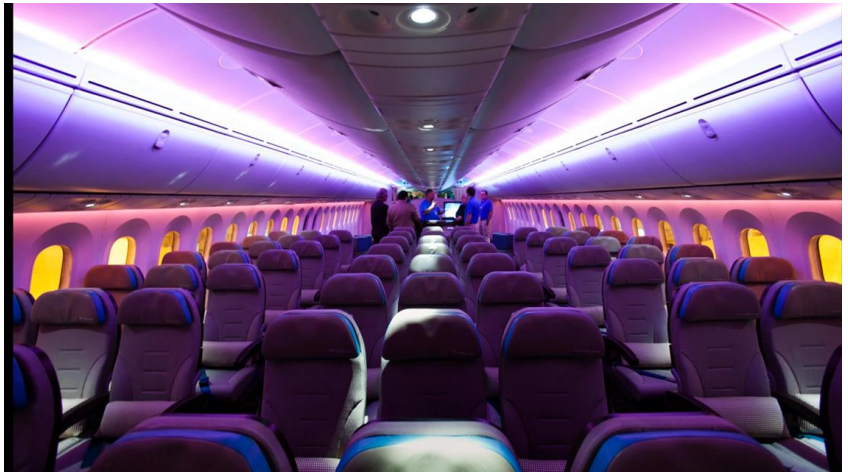
Class of 1964: Air Travel

Speed 574 mph – Altitude 43K feet
313 Passengers

Speed 562 mph – Altitude 43K feet
242 Passengers



777 Economy Interior



787 Economy Interior

See Appendix 3 for some other aircraft of the 20th century.

Class of 1964: Air Travel

- There are more Boeing 737s flying today than any other airplane.
- Today's 737s are a longer version of the 1967 737.
- Today's 737 has larger engines but still uses kerosene based jet fuel.
- The speed and altitude are the same as the Boeing 707 of 1958.
- They have more electronics today.

737-100 of 1967

737-MAX of 2016

Cockpit controls are the same as the original 737, but now avionics are touchscreen.

Class of 1964: Air Travel

Seating arrangement is the same as the original 737 of 1967.
Some airlines today have touchscreens at each seat.

Economy Class Meals 2000s

United Airlines
Bun Burger - $10

Delta Airline
Chicken Sandwich - $12

Southwest
Snack Box - Free

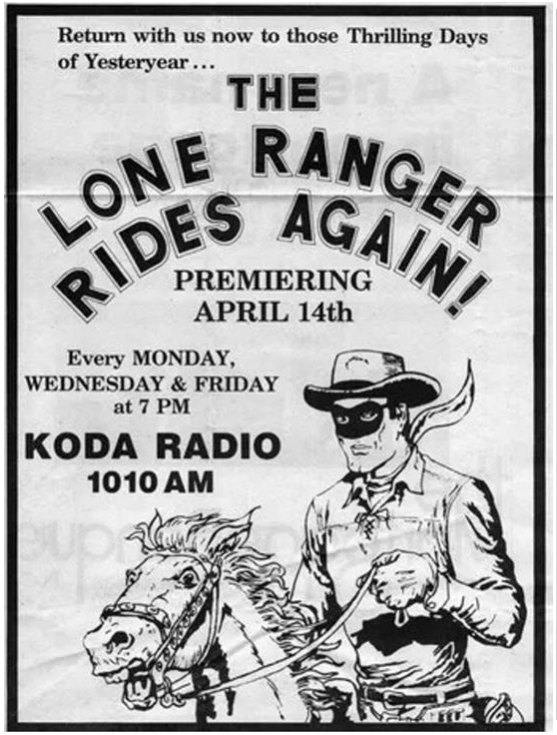
Class of 1904: Radio and Television

- Crystal radios in the early 1900s were small units often made from kits.
- There was no voice or music broadcast in1904. Only **Morse Code** could be heard.
- On Christmas Eve 1906, Reginald Fessenden beamed a "Christmas Concert" to United Fruit Company ships.
  - This was the first time voice and music were broadcast. The first words were **"Glory to God in the highest on earth, peace, goodwill toward men."**
- **Westinghouse transmitted the first scheduled radio broadcast on Nov. 2, 1920 from Pittsburg.**
  - The call sign was KDKA. Leo Rosenberg announced live returns of the Presidential election between Warren G. Harding and James Cox.
- Vacuum tube radios were developed in 1914.

Class of 1904: Radio and Television

By the mid 1930s radios were affordable, and there were many popular programs broadcast. There were shows like Flash Gordon, the Lone Ranger, the Bob Hope Show, Bing Crosby (host of the Kraft Music Hall), the Jack Benny Show, Fibber Mcgee and Molly and the Burns and Allen Show. There were also news and sports shows.

1935 RCA Victor Radio Model T6-1



1933

Class of 1904: Radio and Television

By the time the class of 1904 had their 50th reunion, most of them could afford a television. In 1954, 21 inch, 24 inch and 27 inch TVs were available. Well-off classmates could afford the new RCA color television, first introduced in 1954. There were few color programs broadcast in those days.

RCA Victor
21” B/W TV, 1954

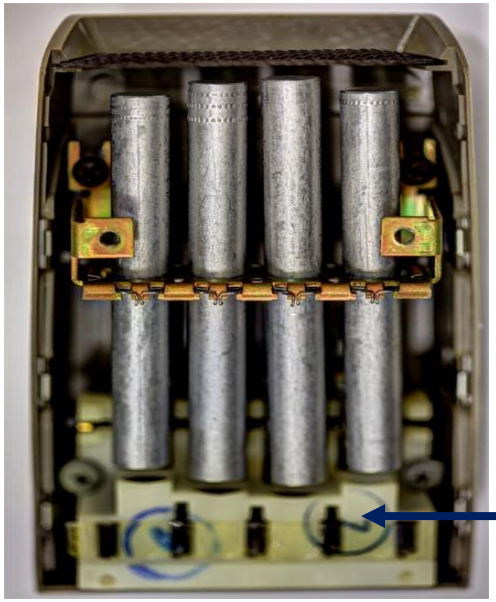
RCA Model CT-100
15” Color TV, 1954

Class of 1904: Radio and Television

When members of the class of 1904 reached retirement age, they would have appreciated having a remote control for their television.

Zenith Space Commander late 1950s

There were four buttons: “On/Off”, “Channel Up”, “Channel Down” and “Mute Sound”.



There were no electronics and no batteries inside the remote.

Hammer triggered by the button

- A hammer caused a click on one of the tubes of different length.
- The TV microphone picked the click sound of a tube and electronics caused one of the four functions.
- Sounds such as a fork dropping on the floor would make the same sound and trigger a function to the surprise of the viewer.

Class of 1964: Television

Magnavox Color TV, 1967

- All the networks were broadcasting in color by 1965.
- Color quality in 1967 had greatly improved since the color sets of the 1950s.

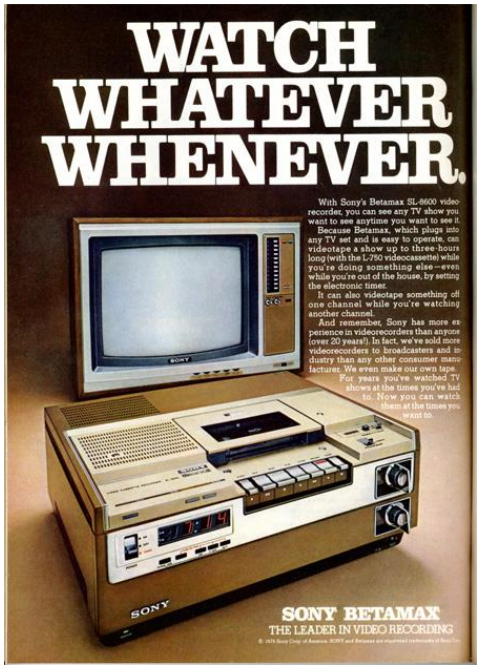
- **Zenith Large Analog CRT TV, 1990**
  Screens became larger as much as 60 inches.
- Projectors, instead of TV sets, project onto a wall screen.

Class of 1964: Television

TV programs could not be recorded until the mid 1970s, when video cassette recorders became available.

JVC VHS VCR, 1976

VHS (Video Home System) eventually became the standard.



Many Betamax recorders were sold but the brand was short lived.

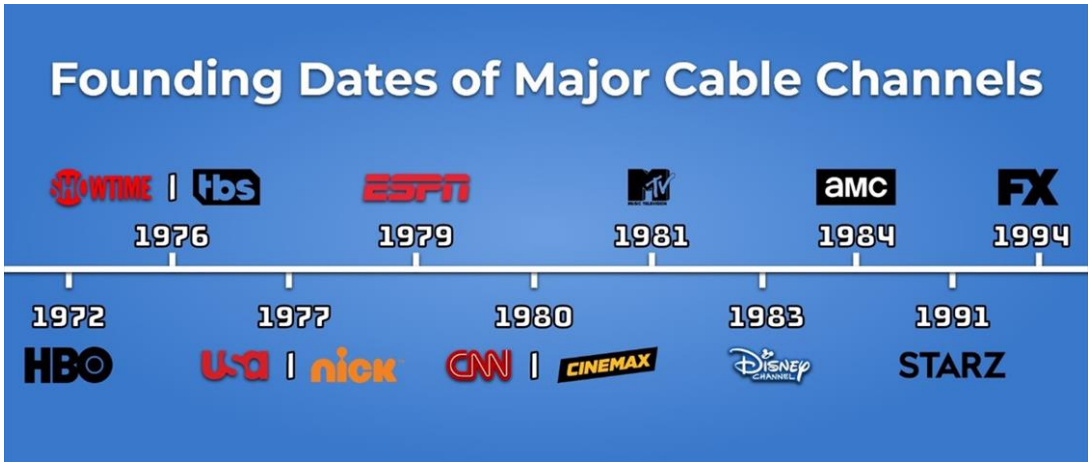
DVDs eventually became the standard and are still used. Today, streaming from computer memory or the Internet is mostly used for video viewing.

Class of 1964: Television

- On June 12, 2009, the FCC required that all high-power analog U.S. television stations turn off their signals and move to digital-only transmission.
- Early HDTVS had resolution of 720 pixels. Later, it was 1080 pixels, then Ultra HDTV at 4096 pixels and 8192 pixels.
- HDTVs today are smart TVs.

CABLE TELEVISION

- Cable Television started in 1948 in a few rural areas where TV reception, via antennas, was poor.
- Cities all over the US had cable by the mid 1960s. The first cable channel was HBO that started in 1972.
- Many 1904 graduates saw these developments.



Class of 1904: Motion Pictures

- The **Lyceum Theater** in New York City on Broadway was built in 1903. The theater is still there.
- Only silent movies were shown.
- Music was provided by a piano, an organ or a full orchestra located in the theater.
- The movie film was 35mm, that became the standard in 1932.

The silent 1902 ***Trip to the Moon*** was a popular movie in the early 1900s.

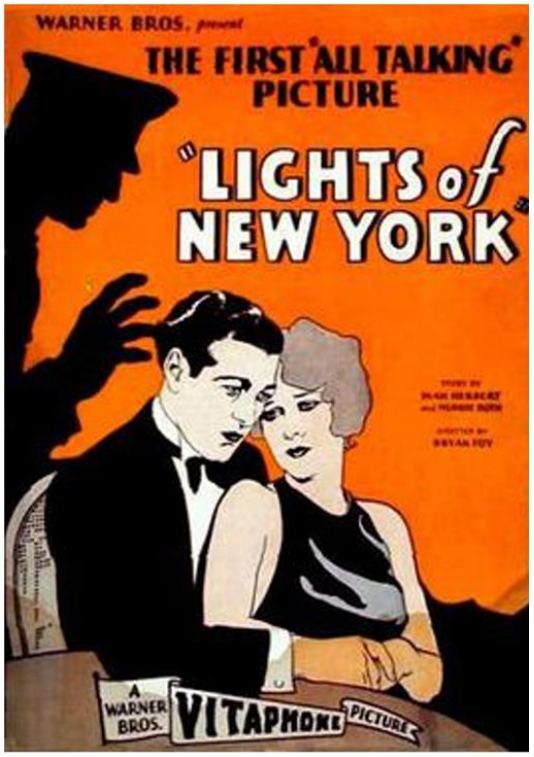
It can be seen on YouTube at: https://youtu.be/bNhlc5Hldlc?si=-Ahk4RxdarTmu6RL

Class of 1904: Motion Pictures

Synchronizing sound with movie film was tried many times in the 1920s. One effort was the *Vitaphone,* where a record player was mechanically connected to the projector.

Wings, first shown in 1927, had synchronized sound scoring and Effects. It was not a “talking” movie.

The 1928 movie ***Lights of New York*** had Vitaphone sound. It was the first full length “talking” movie*.

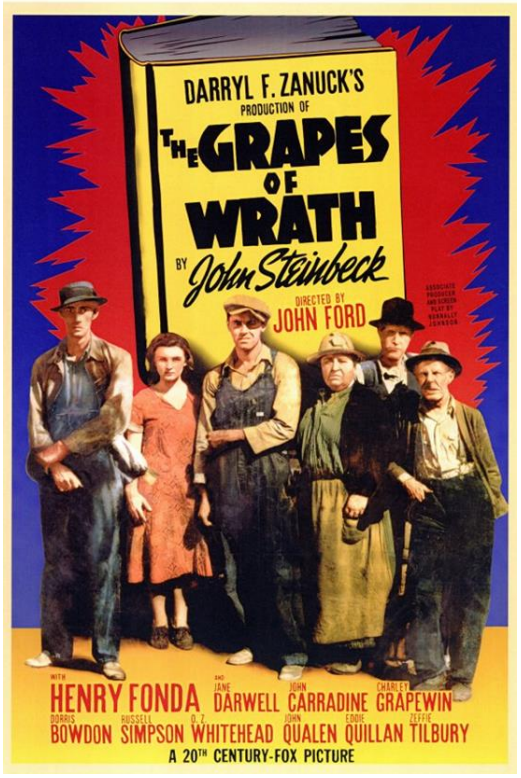


***Note that the 1927 *Jazz Singer* is often considered to be the first full length sound movie. However, it was Vitaphone and only partially “talking.”**

Class of 1904: Motion Pictures

At the time the class of 1904 had their 30th reunion, movie technology had greatly improved. There were many movies in the1930s that are still viewed today.

The sound was greatly improved when optical sound tracks were added to the film.



Going to the movies and listening to radio helped people cope with the difficulties of the Great Depression.

Class of 1904: Motion Pictures

There were a number of color movies in the 1920s. The first movie in Technicolor was *The Viking* in 1928. It had synchronized sound but no talking. It is on YouTube: https://youtu.be/PCwpA7NxK7A?si=D6hmMxiNfodqM6Pp

1939

1937

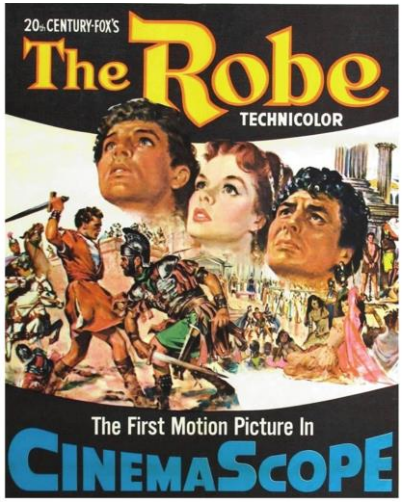
The best known color movies of the 1930s were produced in 1937 and 1939.

1939

Class of 1904: Motion Pictures

The year 1954 was fifty years since the high school class of 1904 had graduated. Film technology had improved and theaters had the wide screens for CinemaScope pictures. Many theaters were large movie palaces:

CinemaScope was invented in 1952. The first CinemaScope movie was *The Robe* in 1953.



(See Appendix 4 for some details of CinemaScope wide screen technology)

Class of 1964: Motion pictures

Movie theaters all over the country that had the wide CinemaScope screens closed over the years. Almost all of the elegant movie palaces have disappear since 1964.

Most theaters today are Multiplex:

CinemaScope aspect ratio was 2.5:1

M**ultiplex** movie theater screens have aspect ratios of 1.85:1

HDTVs have aspect ratio of1.78:1 (16:9)

Some theaters in the 21st century have luxury seats.

Class of 1964: Motion pictures

The biggest advances in motion picture production in the 21st century has been the switch to digital and advances in Computer-Generated Imagery (CGI).

Since 2013, most movies have been in digital rather than 35mm film.

- Most of the projectionists who operated the 35mm film projectors are gone.
- Digital projectionists operate the system via a computer keyboard.

Computer-Generated Imagery (CGI) visual effects get more sophisticated as the power of computers increase.

Class of 1904: The Home

A good presentation on the changes to the home in the 20th century is the Disney ***The Carousel of Progress*.**

Here is a video of the entire presentation. Click on the picture, the link, or search YouTube for Disney *Carousel of Progress*:

https://youtu.be/_p9gayNy5Rg?si=RrhLsOL4NkA9fyaO

The next slides have more information of these homes of the 20th century.

Class of 1904: The Home

At the time high school students of 1904 graduated, there was no electricity in homes. By 1910, less than 2% of US homes had electricity.

The stove was coal burning.

The ice box required large blocks of ice that were delivered daily by icemen.

Less than 1% of homes had telephones in 1904. Electrical power for phones came from the phone companies.

Washing machines were hand powered.

Class of 1904: The Home

At the end of the 1920s, 68% of homes had electricity. By 1940, 75% of homes had electricity. A large contribution were loans by the Federal Rural Electrification Administration (REA) in the 1930s.

Appliances were all electric: Some are ovens/stoves, sewing machines, washing machines, record players and refrigerators.

40% of homes had telephones by 1929. Many were rotary dial phones.

Class of 1904: The Home

Some homes had dishwashers as shown in this Carousel presentation.

Homes had clothes washers and dryers.

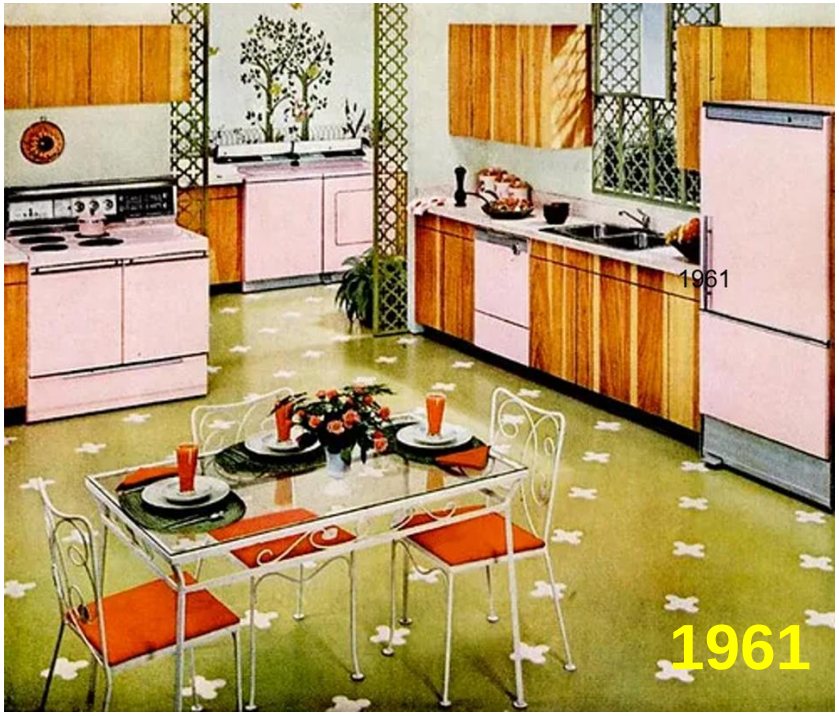
The TV set shown in the Carousel presentation looks like a 10” TV. These were expensive in the late 1940s costing over $300.

Many cities and towns did not have television stations until 1949/1950.

A Westinghouse washer and dryer in 1949. Small appliances are on top.

Class of 1904: The Home

Appliances in the late 1950s and early 1960s were showing modern designs. Colors like pink and green were used.



Wealthier 1904 graduates would be able to afford the TAPPAN microwave oven. It sold for $1295 in 1955. Very few were sold.

Class of 1964: Homes

During the last decades of the 20th century, home appliances did not change as much as the first half of the century.

Microwave ovens and double door refrigerators were common in homes of the mid-1970s.

White appliances (and some black) were popular in the 1990s. Stainless steel appliance were beginning to be purchased.

Class of 1964: Homes

Smart appliances in 2023 connect to the internet and can be controlled remotely. They can follow instructions and perform multiple tasks that previously required human interaction.

- A smart refrigerator is connected to the Internet. All of this is controlled by voice (like with Alexa) or cell phone.
- The smart refrigerator can search for recipes based on what is inside. It can plan weekly meals and send cooking instructions to a smart oven.

Smart appliances can be a part of smart homes.
Here is a link to a YouTube to a smart home in Arizona. It seems way too complicated:
https://youtu.be/yDNWVRmRHlY?si=Ow0n3O9aJJYuBP9k

Or click on this image.

There are many other YouTube videos on Smart Homes.

Class of 1964: Homes

My guess is that many of 1964 high school graduates prefer simpler and cheaper appliances. Smart refrigerators can cost $2,000 to $3,000, whereas a simple modern refrigerator can cost less than $1,000.

2023 Refrigerator

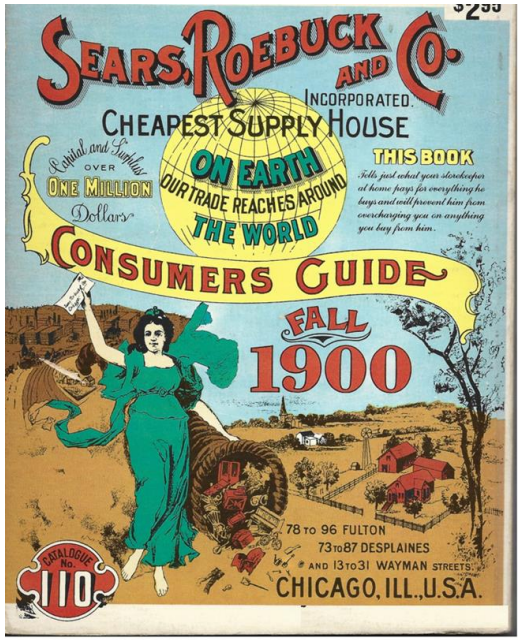
Some non-smart appliances have touch screen controls. However, many just have manual dials.

Refrigerators, washing machines, stoves and other appliances are very similar to those of 60 years ago.

2023 Clothes Washer

Class of 1904: Shopping from Home

The class of 1904 could purchase over 100,000 items from a Sears & Roebuck catalog. There were motor buggies, tools, apparel, appliances, furniture, organs, dinnerware, “cure all” medicines, farm equipment and much more.

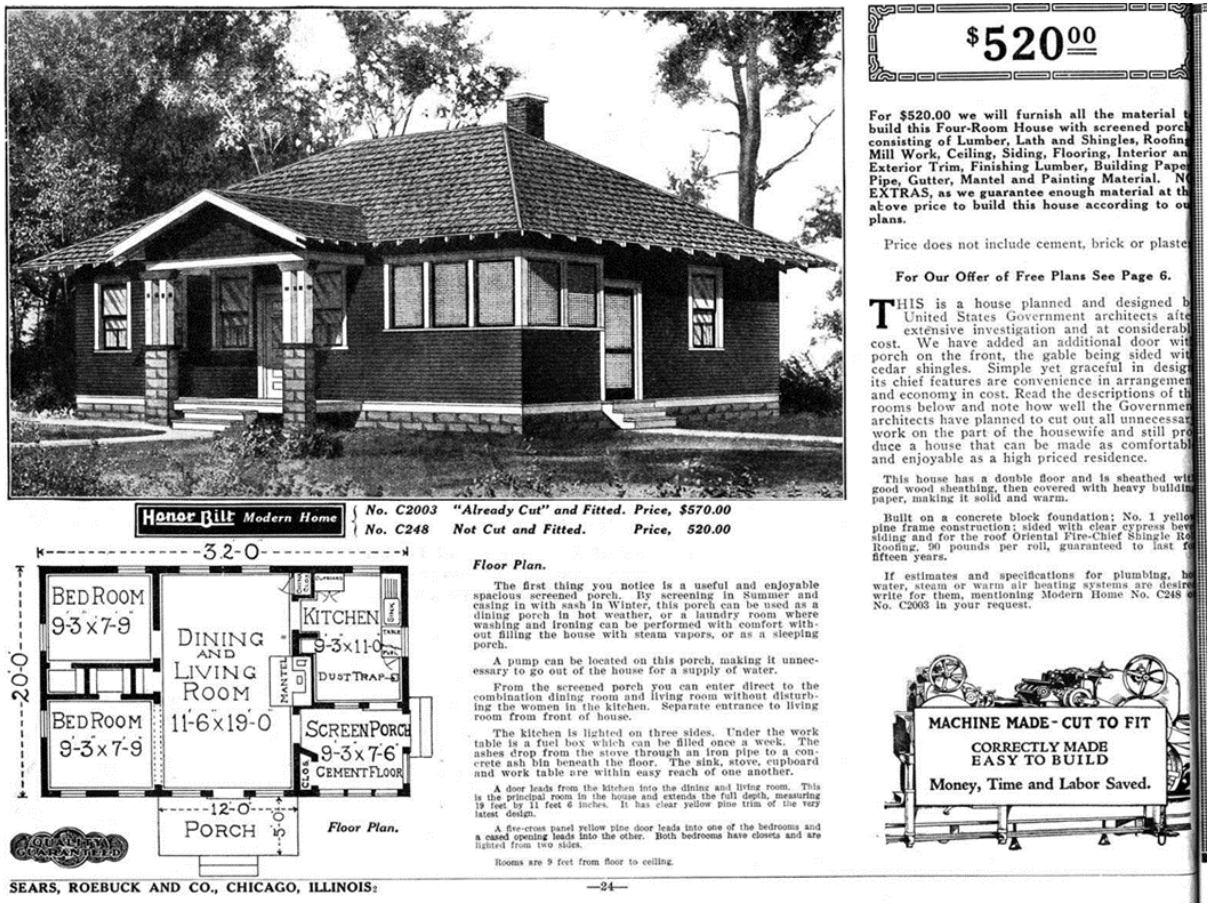


Parlor Organ

Class of 1904: Shopping for a Home Kit

Sears & Roebuck and other companies had home kits catalogs. Prices ranged from $500 to over $6,000 for larger homes. Kits contained more than 30,000 pieces. Each piece was marked and instructions showed which pieces fit together. This was a similar technique used by the Revell model kits.

This from an early 1900s Sears catalog:



Honor Bilt Modern Home

No. C2003 "Already Cut" and Fitted. Price, $570.00
No. C248 Not Cut and Fitted. Price, 520.00

Floor Plan.

Floor Plan.

The first thing you notice is a useful and enjoyable spacious screened porch. By screening in Summer and casing in with sash in Winter, this porch can be used as a dining porch in hot weather, or a laundry room where washing and ironing can be performed with comfort without filling the house with steam vapors, or as a sleeping porch.

A pump can be located on this porch, making it unnecessary to go out of the house for a supply of water.

From the screened porch you can enter direct to the combination dining room and living room without disturbing the women in the kitchen. Separate entrance to living room from front of house.

The kitchen is lighted on three sides. Under the work table is a fuel box which can be filled once a week. The ashes drop from the stove through an iron pipe to a concrete ash bin beneath the floor. The sink, stove, cupboard and work table are within easy reach of one another.

A door leads from the kitchen into the dining and living room. This is the principal room in the house and extends the full depth, measuring 19 feet, by 11 feet 6 inches. It has clear yellow pine trim of the very latest design.

A five-cross panel yellow pine door leads into one of the bedrooms and a cased opening leads into the other. Both bedrooms have closets and are lighted from two sides.

Rooms are 9 feet from floor to ceiling.

$520.00

For $520.00 we will furnish all the material t build this Four-Room House with screened porch consisting of Lumber, Lath and Shingles, Roofing Mill Work, Ceiling, Siding, Flooring, Interior an Exterior Trim, Finishing Lumber, Building Pape Pipe, Gutter, Mantel and Painting Material. N EXTRAS, as we guarantee enough material at th above price to build this house according to ou plans.

Price does not include cement, brick or plaste

For Our Offer of Free Plans See Page 6.

THIS is a house planned and designed b United States Government architects afte extensive investigation and at considerabl cost. We have added an additional door wit porch on the front, the gable being sided wit cedar shingles. Simple yet graceful in desig its chief features are convenience in arrangemen and economy in cost. Read the descriptions of th rooms below and note how well the Governmen architects have planned to cut out all unnecessar work on the part of the housewife and still pro duce a house that can be made as comfortabl and enjoyable as a high priced residence.

This house has a double floor and is sheathed wit good wood sheathing, then covered with heavy buildin paper, making it solid and warm.

Built on a concrete block foundation; No. 1 yello pine frame construction; sided with clear cypress bev siding and for the roof Oriental Fire-Chief Shingle Ro Roofing, 90 pounds per roll, guaranteed to last fi fifteen years.

If estimates and specifications for plumbing, he water, steam or warm air heating systems are desire write for them, mentioning Modern Home No. C248 o No. C2003 in your request.

SEARS, ROEBUCK AND CO., CHICAGO, ILLINOIS.

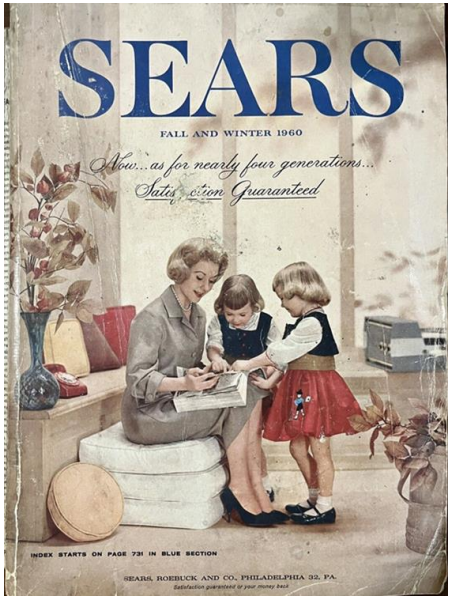
—24—

If you have a very old house, you can determine if it is a Sears, or another company's kit, by looking for markings on exposed wood in attics, basement, closets etc.

Class of 1904: Shopping from Home

For the rest of their lives, the class of 1904 could shop from home via various catalogs. At their 60th reunion, in 1964, milk and other products were still being delivered to homes. For many years groceries could be ordered by phone.

1942/43



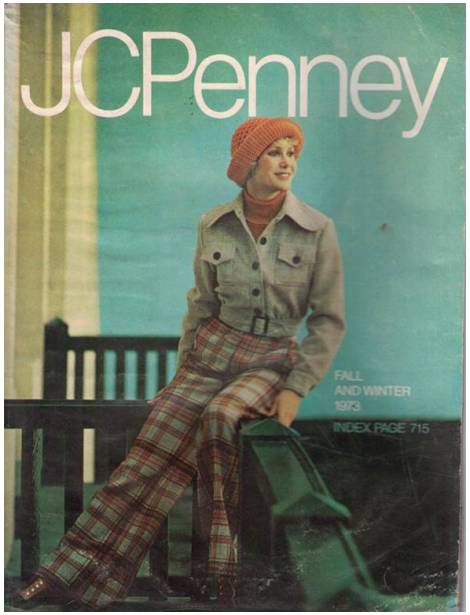
1960

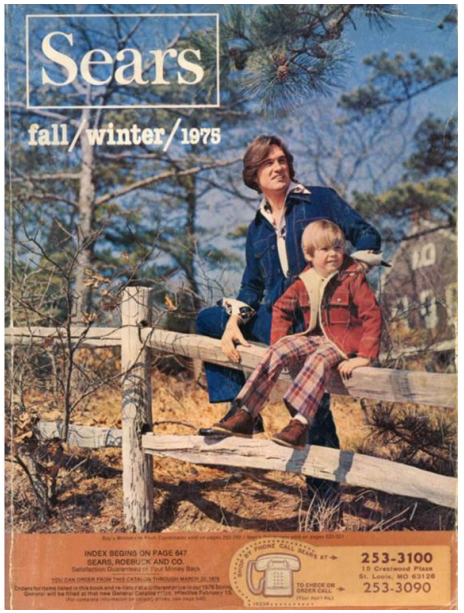
Companies like Montgomery Wards and JCPenney also had catalogs for many decades in the 20th century.

Dairy delivery (milk and eggs) began before the 20th century and continued until the 1990s.

Class of 1964: Shopping from Home

The class of 1964 could order from a number of catalogs for many years. JCPenney's catalog and some others lasted until the early 2000s. Most ordering in the 2000s was done on-line from websites such as Amazon.com.





amazon ebay

Amazon and ebay began in 1995.

Class of 1904: Computers

Most of the class of 1904 had never seen a computer or heard much about computers. That may have changed on election night in 1952 when a Univac computer predicted that Eisenhower would win.

Walter Cronkite covered the 1952 election on CBS TV when the Univac computer predicted the winner.

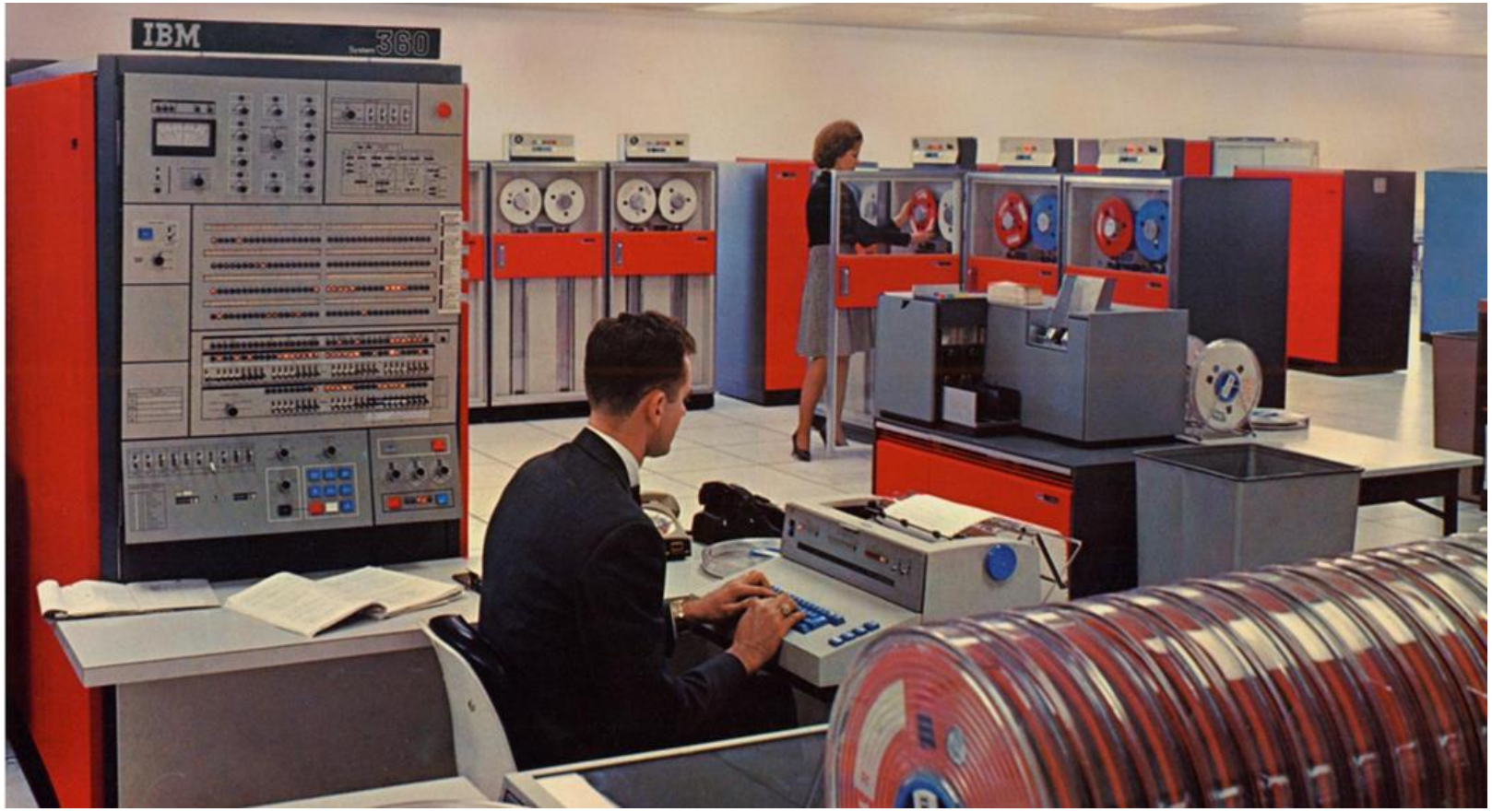
Here is a link to an interesting YouTube video of the event that evening:

https://youtu.be/abibiFa3gj0?si=wKHfq4zoG9DX_S52

Graduates from High School in 1904 would be in their early 90s when the first practical personal computer was introduced by IBM (IBM 5150) priced at $1,565.

Class of 1964: Computers

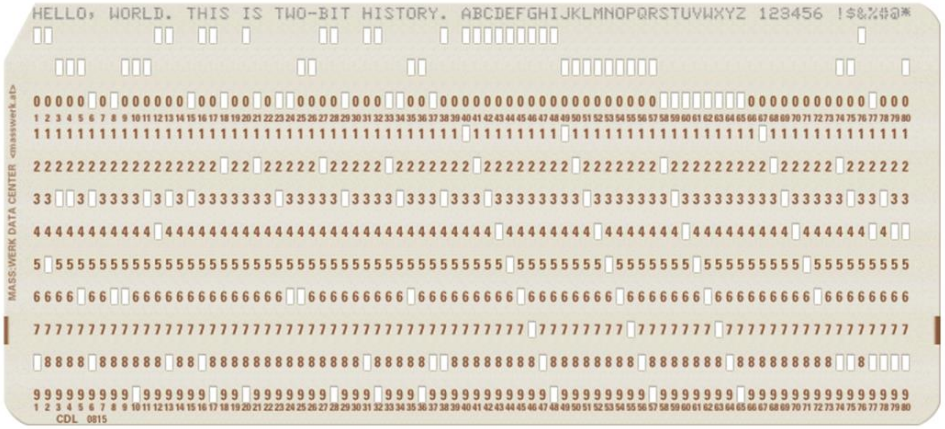
While on their jobs or in college, many 1964 High School graduates used computers, such as the new IBM System/360 computer first sold in 1965. Notice that there was no monitor and most data storage was on tape.



IBM System/360

Class of 1964: Computers

- Programing the **IBM 360** involved writing lines of code on a sheet of paper.
- Each line was entered on a separate punch card via a key punch machine.
- A stack of cards was given to the computer operator. The results would be printed out.



Key Punch Card

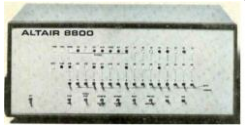
Key Punch Machine

```
 1          K=1
 2     6    IF (K.EQ.11) GO TO 8
 3          READ,I,J
 4          IF (J.GT.I) GO TO 65
 5          GO TO 66
 6     65   WRITE(6,6002)J,I
 7     6002 FORMAT(' ',I3,' IS GREATER THAN ',I3)
 8          K=K+1
 9          GO TO 6
10     66   WRITE(6,6001)I,J
11     6001 FORMAT(' ',I3,' IS GREATER THAN ',I3)
12          K=K+1
13          GO TO 6
14     8    CALL EXIT
15          END
```

Printout of a short Fortran program

Class of 1964: Computers

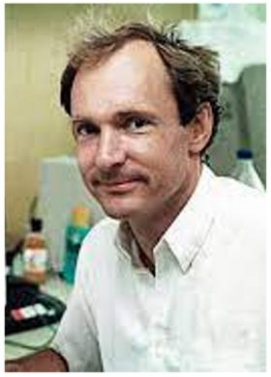
There were many computer companies in the 1970s that built small computers that had minimum capabilities. Some were hobbyist kits.



The **IBM 5151 of 1981** and the **Apple Macintosh of 1984** established the standards for most computers today. IBM PC clones and Apple computers survive today. The IBM 5151 used Microsoft software. Most computers today use Microsoft software.

1992 Apple Powerbook

1990s PC



The www was invented by Tim Berners-Lee. It started in 1989.

The development of computers closely followed Gordon Moore's Law of 1965. This law states number of transistors on an integrated circuit will double every two years with minimal rise in cost.

A good history timeline of computers is at this Computer History Museum site: https://www.computerhistory.org/timeline/computers/

Class of 1964: Computers

The late Douglas Engelbart invented the mouse in 1963. The first one was made of wood.
Here is a link to a YouTube of December 1968 where he demonstrates a newer version of the mouse. Notice how he apologizes for calling it a mouse:

https://youtu.be/1MPJZ6M52dI?si=7wOk-h09JrQPbble

Class of 1964: Cell Phones

The mobile phone was invented in 1973 by Martin Cooper of Motorola. It was the DynaTac 8000X (a.k.a. “the brick”) and it took 10 years before it was sold commercially for $4,000. Few were sold because of the high price.

(It is possible that some 1904 graduates in their late 90s may have purchased this phone, but highly unlikely.)

Nokia 1011, First mass produced GSM cell phone, 1992

AT&T Flip Phone Mid 1990s

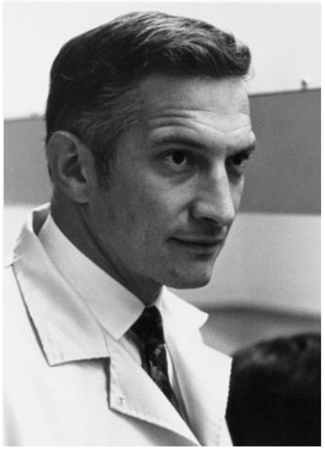
iPhone 1 First touch Screen 2007

Samsung Galaxy Z Flip 5G, August 2023

Here is a link to a webpage of the long history of the cell phone:
[History Of The Cell Phone (1973 to 2023) - Practically Networked]

Epilogue

I believe that the changes the high school **class of 1904** experienced in 60 years were much more than what **our class of 1964** has seen in the last 60 years.



One major exception is electronics. Progress in electronics has been much more advanced than what I thought it would be in the way we live and work. This is due to the **Monolithic Integrated Circuit (Chip)** invented in 1959 by **Robert Noyce*** of Fairchild and Intel.

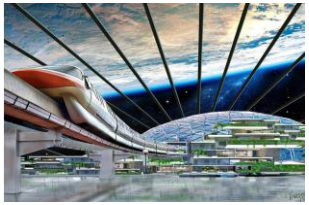
After the moon landing in June 1969, I imagined what the future would be like. The next two slides show what I thought would occur, but never happened.

***** There were other contributors to the invention of the integrated circuit, including Jack Kilby of Texas Instruments. Noyce's invention was the only practical technology that eventually allowed for billions of transistors on a chip.

Epilogue-Continued

The following is what I had envisioned for the future. These never occurred:

- Astronauts visiting Mars by 1980 and space communities by 2000.

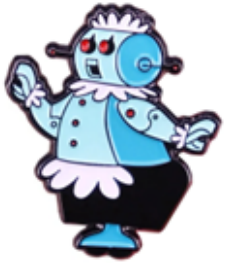


- Cars like the Mercedes Benz F015 concept car. Cars would run on guideways. Speeds would be 100s of mph on express guideways. Power would come from electricity from the guideway or by atomic engines.

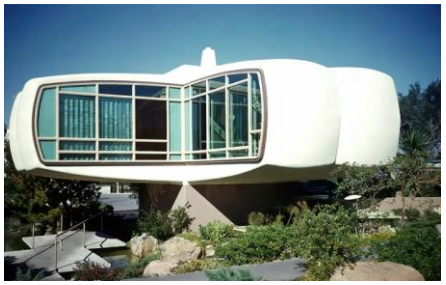
- Hypersonic airliner traveling at 12,000 mph. Travel between any two places in the world would be about 2 hours. This would be 30 minutes for takeoff and getting to altitude, one hour for cruising and 30 minutes for descent and landing.

Epilogue-Continued

The following is what I had envisioned for the future. These never occurred:



- All household chores, including cooking, would be done by robots.
  - This would be similar to the robot maid "Rosie" of the 1960s TV show *The Jetsons.*
- Homes would be constructed like the Monsanto House of the Future in Disneyland that are earthquake, hurricane and tornado proof.
  - Home building materials, food and all kind of products would be manufactured.



- The American inventor and futurist, **Charles Kettering,** spoke about this possibility: *"If a machine were invented that could perform the same function as a leaf, we could produce just about any type of material in abundance and cheaply. "A machine does not need to be exactly the same as a leaf."* he said and *"We watched birds fly, but when the airplane was invented, the wings did not have feathers."*

Appendices

1. Some famous people who might have graduated from high school in 1904.
2. Some famous people who might have graduated from high school in 1964.
3. Other 20th Century Airliners.
4. Detail on CinemaScope Technology.

Appendix 1: Famous People, Class of 1904

Most of the class of 1904 would have been born in 1886 or 1887.
Here is a list of some famous people who were born in these years:

- **Leo G Carrol**, Movie and TV Actor, 1886-1972.
- **Raymond Spruance**, WWII US Navy Admiral, 1886-1969.
- **Hugo Black**, Supreme Court Justice, 1886-1971.
- **George Hill**, Racing Car Driver, 1886-1967.

- **George Abbot**, Theater producer director, 1887-1995.
  (*I checked a couple of sources and he remained active until he was 107*.)
- **Georgia O'Keffe**, Painter, 1887-1986.
- **Boris Karlof**, Actor, 1887-1969.
- **Conrad Hilton**, Hotel Owner, 1887-1979.
- **Alf Landon**, Governor of Kansas, Presidential Candidate, 1887-1987.

Here are two links to a website that has hundreds of famous people born in each of these years:

Famous People Born in 1886 (thefamouspeople.com)

Famous People Born in 1887 (thefamouspeople.com)

Appendix 2: Famous People, Class of 1964

Most of the class of 1964 would have been born in 1946 or 1947. Here is a list of some famous people who were born in these years:

- **Steven Spielberg**, Producer, Director, 1946.
- **Reggie Jackson**, Baseball Player, 1946.
- **Judy Woodruff**, Television Journalist, 1946.
- **Charles Bolden**, Astronaut, 1946.
- **Robert Metcalfe**, Computer Scientist, 1946.

- **Glenn Close**, Actor, 1947.
- **Danielle Steel**, Writer, 1947.
- **Steve Forbes**, Publisher, 1947.
- **Nolan Ryan**, Baseball Player, 1947.

Here are two links to a website that has hundreds of famous people born in each of these years:

Famous People Born in 1946 (thefamouspeople.com)

Famous People Born in 1947 (thefamouspeople.com)

Appendix 3:

Other Aircraft: 20th Century and early 21st Century

The aircraft in previous slides are the ones most used by airlines, particularly in the USA. However, there are many others such as Lockheed's Lodestar, Constellation Electra Turboprop and the 1011 Tristar jet. Also, the Airbus 300 series and the short-lived Concorde, the supersonic jet.

There were only 252 of the 500-passenger **double deck Airbus 380** sold. They are expensive to operate. This is mainly because of the large use of kerosene-based jet fuel and the expense of 21 crew members.

The British/French supersonic **Concorde** was mainly for the wealthy travelers. It was not feasible for most routes because of the high fuel costs and the sonic booms which prevented flying over land.

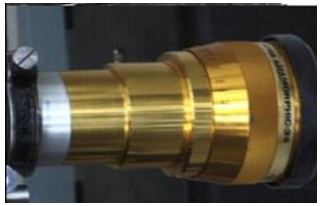
Appendix 4: CinemaScope

The amazing thing about CinemaScope (invented in 1952) is that the same 35mm carbon-arc projectors that had been in theaters for decades could be used with no modifications.

Picture on the screen with regular lens.

- **A wide screen was installed in theaters.**
- **The original 35mm carbon-arc projectors remained, and only required a special anamorphic lens to project onto the wide screen.**

Picture on the screen with wide angle lens.



A wide-angle lens was interchanged with the regular lens.