

THE STORY OF
THE TIME CAPSULE



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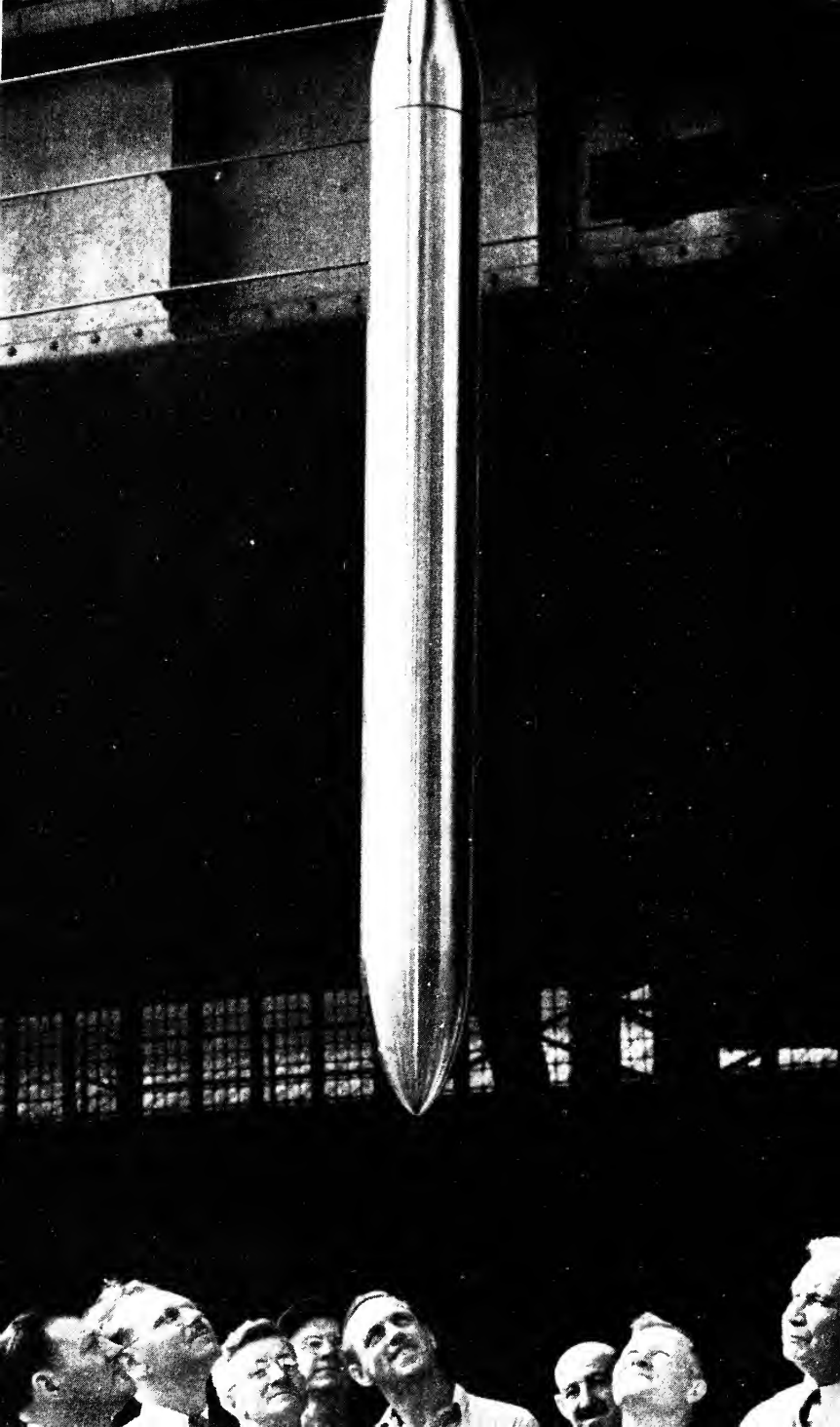
The Story of the
WESTINGHOUSE
TIME CAPSULE



*What the Project Means—How the Time
Capsule Was Constructed—What it Contains
—How It Will Be Protected Against Van-
dalism—How Word of Its Location Has Been
Left for the Future.*



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THE STORY OF THE WESTINGHOUSE TIME CAPSULE

EVER SINCE archaeologists and historians turned their talents to deciphering the unrecorded past, human beings have dreamed of simplifying the problem for scientists of the future, deliberately preparing a message from our time to theirs.

Until recently this perennial dream has been only a dream. The problem of preserving such a record is extremely difficult. Crypts on the earth's surface, no matter how strong, offer obvious temptation to vandals. Most materials suitable to be deposited in the earth are subject to rapid corrosion, or are too brittle or too difficult to find after burial. Too little was known about the effects of time to permit anyone confidently to design a vessel for the future.

A few months ago engineers of the Westinghouse Electric & Manufacturing Company decided that the advance of technology had removed these difficulties at last, and what hitherto had seemed impossible could now be done.

Early in 1938 they decided upon building a "Time Capsule" capable of lasting 5,000 years—a period of time almost as long as that of all recorded history. Five thousand years ago the pyramids were still unbuilt. The peoples of that time had discovered metals, and were using metallic alloys. They had learned how to write down human



Casting the Capsule's shell in molten Cupaloy

speech, and record language on clay tablets and stone. They understood commerce; they knew how to build huge cities. But they had not yet devised the alphabet, and they did not know of the existence of iron.

Five thousand years from now the peoples of the future will look back upon us as we look back on the early Egyptians, Sumerians and Babylonians. It was the plan of Westinghouse engineers to provide them with more knowledge of us than we have of any of the ancient peoples who lived before us.

Three Major Problems

This project clearly required the solution of three great problems.

The first was, how to build a vessel capable of lasting 5,000 years, and how to preserve it for posterity.

The second, how to leave word of its whereabouts for historians of the future.

The third, the selection and preservation of its contents.

Each of these problems was carefully considered. At each step, counsel was taken with archaeologists, historians, technical and scientific men, hundreds of whom participated with Westinghouse in the working out of this project. A Time Capsule Committee was formed, which established sub-committees to study the various questions relating to the plan.

A sub-committee headed by M. W. Smith, Westinghouse Manager of Engineering, undertook the solution of the first problem: that of designing and constructing the Time Capsule. It was decided that the best material would be a metallic alloy of high corrosion resistance and considerable hardness, non-ferrous (containing no iron), and preferably

Careful hands fashion the Capsule





The Capsule begins to take final form

consisting principally of copper, oldest of the metals used by man.

A new alloy of copper, known as Cupaloy (copper 99.4 per cent, chromium 0.5 per cent, silver 0.1 per cent) was found most nearly to fulfill the specifications. Like that reputed to have been used by the ancient Egyptians, the secret of which has been lost, this metal can be tempered to the hardness of steel, yet has a resistance to corrosion equal to pure copper. Also—of great importance—in electrolytic reactions with iron-bearing metals in the soil it becomes the anode and therefore will receive deposits instead of wasting away, as do buried water-pipes and other iron alloys. Moreover, Cupaloy is especially resistant to corrosion in salt water.

For reasons of strength and convenience, the Time Capsule was shaped like a torpedo, seven and a half feet long and eight and three-eighths inches

in diameter. The outer shell consists of seven cast segments of Cupaloy, threaded, screwed together hard, and sealed with molten asphalt. The nearly invisible joints have been peened out and the outer surface burnished. The walls of the Cupaloy segments are one inch thick, thus leaving an inner crypt six and three-eighths inches in diameter and six feet, nine inches long. The crypt is lined with an envelope of Pyrex glass, set in a water-repellent petroleum base wax. Washed, evacuated and filled with humid nitrogen, an inert, preservative gas, this glass inner crypt contains the "cross-section of our time."

For the Guidance of "Futurians"

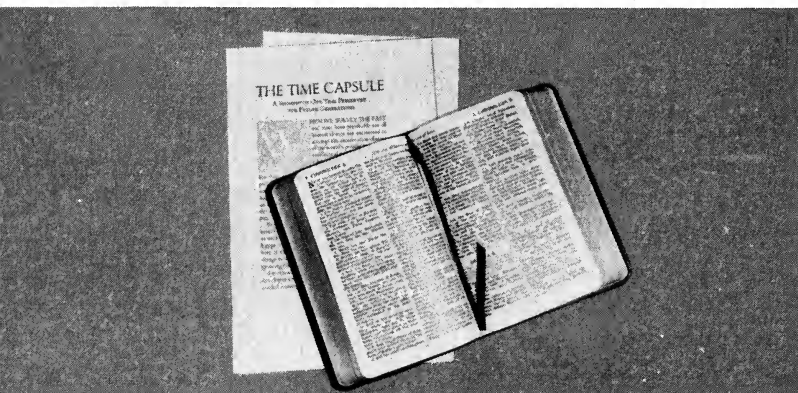
The second great problem, that of how to leave word of the whereabouts of the Time Capsule, was met by preparing a BOOK OF RECORD OF THE TIME CAPSULE, printed on permanent paper with special inks. Copies have now been distributed to

Inspectors follow every detailed step



libraries, museums, monasteries, convents, lamaseries, temples and other safe repositories throughout the world.

The BOOK OF RECORD was prepared after detailed consultation with libraries, museum authorities, printers and bookbinders. Suggestions for binding and general treatment were obtained from the office of the National Archives, the New York Public Library, the American Library Association and other sources. The United States Bureau of



The Book of Record and the Holy Bible

Standards furnished specifications for the permanent paper and inks. A special run of 100-pound rag book paper was manufactured for the book. The pages of each copy were sewn together by hand with linen thread. A portion of the edition was bound in royal blue buckram stamped with genuine gold. The remainder was bound in handmade flexible paper, stamped with aluminum.

In order that the appearance of the BOOK OF RECORD might match its permanence, Frederic W. Goudy, one of the foremost type designers, typog-

raphers and printers of our time, consented to design the book and set a portion of the type. Exactly 3,650 copies were printed, of which 2,000 (including one buried in the Time Capsule) were bound in flexible paper, and 1,650 in buckram.

The BOOK OF RECORD contains a message to posterity asking that it be preserved and translated into new languages as they appear; a description of the Capsule's contents, and the exact latitude and longitude of the deposit as determined by the U. S. Coast and Geodetic Survey to the third decimal point in seconds. The geodetic coordinates are tied into the Survey's national network, on which astronomical as well as geodetic data are given. In addition, instructions are included for making and using instruments to locate the Time Capsule by the methods of electromagnetic prospecting.

That our tongue may be preserved, the book contains an ingenious "Key to the English Language" devised by Dr. John P. Harrington, of the Smithsonian Institution. By means of simple diagrams the peculiarities of English grammar are explained; a mouth map shows how each of the 33 sounds of English are pronounced. A 1,000-word vocabulary of "High Frequency English" spelled in the ordinary way and neo-phonetically, is provided. In itself the Key is believed to contain all the elements archaeologists of the future will need to translate and pronounce 1938 English, but to make doubly certain, the Time Capsule itself also contains multi-lingual texts, a dictionary and a lexicon of slang and colloquial English.

Also contained in the BOOK OF RECORD are messages to the future from three famous men of

our time: Dr. Albert Einstein, Dr. Robert Millikan and Dr. Thomas Mann. A table of common measures in the English and Metric systems is given, including a statement of the length of the standard meter in terms of the wavelength of red cadmium light—a constant that will never vary, no matter what other systems of measurement are in use 5,000 years from now.

Selecting the Contents

Choosing what was to go into the limited space of the Time Capsule crypt proved perhaps the most difficult problem of all, because nothing short of an enormous gallery of vaults could accommodate all the objects and records of any civilization.

The Time Capsule Committee turned for advice to archaeologists, historians and authorities in virtually every field of science, medicine and the arts. On the basis of their helpful suggestions, the Committee chose to include some thirty-five articles of common use, ranging from a slide rule to a woman's hat, each selected for what it might reveal about us to the future archaeologists. Also included are about seventy-five samples of common materials, ranging from fabrics of various kinds,

The woman's hat, specially designed by Lilly Daché, was the last object packed in the Capsule



metals, alloys, plastics, and synthetics to a lump of anthracite and a dozen kinds of common seeds.

These material items, however, are only supplementary to a voluminous essay about us and our times, reduced to microfilm. On three and a half small reels there are reproduced books, articles, magazines, newspapers, reports, circulars, catalogs, pictures; discussing in logical order where we live and work, our arts and entertainment, how information is disseminated among us, our general information, our religions and philosophies, our education and educational systems, our sciences and techniques, our earth, its features and peoples; medicine, public health, dentistry and pharmacy, our major industries and other subjects. This "Micro-File" comprises more than 22,000 pages of text and 1,000 pictures; a total of more than 10,000,000 words. It would take an ordinary person more than a year to read all of it; more than a decade to assimilate all this knowledge. Probably no man living knows as much about us as those who study this Time Capsule will know.

A small microscope is included for reading the microfilm; also instructions for making a larger, more comfortable reading machine, such as those used in libraries and newspaper offices for this purpose. There are likewise instructions for making various kinds of modern instruments, including a motion picture projection machine. For use with this, three reels of newsreel are contained in the Time Capsule, showing about twenty characteristic, significant or historic scenes of our times, complete with sound, and ranging all the way from an address by President Roosevelt to a Miami

fashion show. The newsreel was especially edited for the Capsule by RKO-Pathé Pictures, Inc.

Packing the Time Capsule

The utmost care was taken in packing the contents. Under the direction of representatives of the United States Bureau of Standards each object was examined to determine whether it could be expected to last 5,000 years. All articles containing volatile solvents were ruled out; also all materials which might decompose with the production of fumes or acids that might attack other articles in the crypt. No liquids of any kind were permitted in the crypt. Organic objects, such as seeds, were sealed in special gas-tight glass capsules.

Every object enclosed in the Capsule was then fully labeled and described. The glass capsules containing seeds and other objects contain labels sealed into the glass. All other objects were individually wrapped in heavy 100 per cent rag ledger paper and tied with linen twine, with the label wrapped inside. Where it was necessary to use paste to attach a label, only pure gum arabic was used. Film, including both the microfilm and newsreel, was enclosed in special spun aluminum containers, lined with rag paper.

The position of each object in the crypt was determined by its weight. The heavier objects are packed in the bottom, resting on a cushion of glass wool. The seven containers of film rest about midway in the crypt. The lighter objects, including the woman's hat, are placed on top. The hat was stuffed with surgical cotton to preserve its shape, and wrapped in paper. All spaces between the



Witnesses at the Capsule's packing: F. D. McHugh, David S. Youngholm of Westinghouse, C. G. Weber; seated, Grover A. Whalen

objects in the crypt were cushioned and made firm with glass wool.

The process of packing was conducted in the presence of three official witnesses: C. G. Weber, of the United States Bureau of Standards; F. D. McHugh, managing editor of the *Scientific American*, and Grover Whalen, president of the New York World's Fair 1939. A checklist of contents, bearing the signatures of the witnesses, was the last thing included in the crypt.

Immediately following the packing, the Pyrex inner crypt was placed upon a glass-lathe, heated and sealed. The air was then drawn out through a small tube, the contents washed with inert gas, and the crypt filled with nitrogen, to which just enough moisture was added to equal the humidity of an ordinary room. Protected from oxygen and excess moisture by this inert, humid atmosphere,

the contents are expected to remain in their present condition indefinitely. When archaeologists of the future open the Time Capsule they will probably find the film, fabrics, metals and other materials as fresh and "new" as the day they were put in.

The final step in the preparation of the Capsule was the insertion of the glass inner crypt into the outer Cupaloy shell. Before this was done, the Pyrex envelope was wrapped with several layers of glass tape to increase its strength. Both the Cupaloy outer shell and the packed crypt were then gently warmed in electric ovens to encourage the flow and penetration of the waterproof wax. After the inner crypt was in place, the Capsule was raised upright, and the wax poured in around the glass. "Shrink-fitting" the final Cupaloy joint was then accomplished by chilling the heavy cap to several degrees below zero with dry ice, then turning it into place on tapered threads. When permitted to warm up to the same temperature as

Sealing the packed inner crypt was a delicate task



the rest of the Capsule, the natural expansion of the metal caused the threads to seize so tightly as to form an air-and-water-tight joint.

Depositing the Capsule for the Future

The Time Capsule is preserved for posterity at the site of the New York World's Fair 1939; chosen because New York will certainly be an attractive place for archaeologists 5,000 years from now, as are the sites of ancient Athens, Rome and Troy in our own time.

It was lowered fifty feet into the earth on the site of the Westinghouse Building at the grounds of the World's Fair at high noon on September 23, 1938, the precise moment of the Autumnal Equinox. While a Chinese gong tolled solemnly, A. W. Robertson, Chairman of the Board of the Westinghouse Electric & Manufacturing Company, committed the Time Capsule to posterity with these words: "May the Time Capsule sleep well. When it is awakened 5,000 years from now, may its contents be found a suitable gift to our far-off descendants."

The Capsule made its descent into the earth through a steel pipe ten inches in diameter, and came to rest upon a block of waterproof cement. Before this well is finally closed, the Capsule will be entombed in pitch and an additional layer of concrete, after which the steel pipe will be cut off and withdrawn. The land where it lies will become a city park after the Fair, and the site of the Time Capsule may be marked with a shaft or boulder. During the Fair a replica of the Capsule, and duplicates of all the objects, books and other items



it contains, will be on view in the Westinghouse Building.

Safe from Vandalism and Sinking

Many questions are asked about the Time Capsule project, the principal one being, how will it be protected from thieves or persons whose curiosity is greater than their sense of obligation to the future?

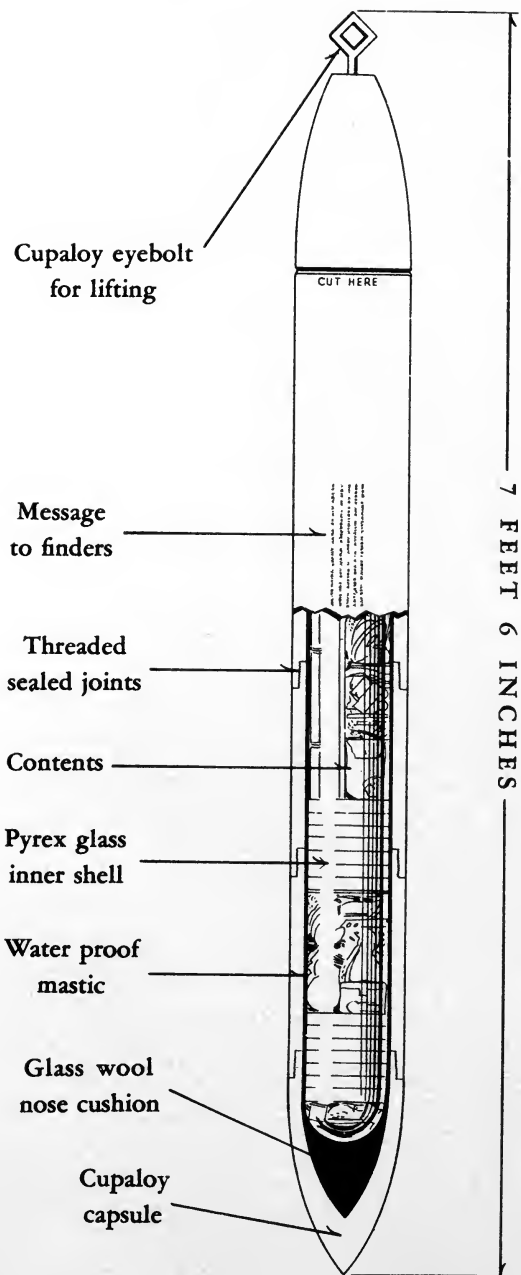
The problem of keeping the Capsule safe from vandals is believed to be well taken care of by the site selected for burial. Sunk fifty feet below the surface of the ground, in swampy soil, recovery will involve an expensive and difficult engineering operation, costing many times the possible intrinsic worth of the Capsule for its metal and saleable contents.

Another question often discussed is whether, 5,000 years from now, the coast will have sunk so far as to drown the area. Consultation with geologists and the U. S. Coast and Geodetic Survey indicate that there is probably no foundation for the common notion that the East Coast is sinking. Surveys extending over the last 40 years show that if there is any sinking at all, the rate is so slow that the change in level in 5,000 years would be only a few feet. The elevation at the site of the Time Capsule is about 20 feet above sea level.

As to the third question frequently asked: will it ever be found again? Westinghouse engineers can only reply that every precaution has been taken, through the BOOK OF RECORD, to guide archaeologists of the future to the exact spot. If the people of the distant future wish to find it, they

can probably do so, even though it should migrate in the earth, or sink. And even if all else fails, we may depend on the perennial curiosity and the digging and burrowing habits of the human race, to unearth it sooner or later. In the words of Dr. Clark Wissler, Dean of the Scientific Staff of the American Museum of Natural History, and one of the foremost archaeologists in the United States:

“We have been told that such efforts as ours here are futile; that, after all existing civilizations have died out and new civilizations come to be, no one will find this record, or if they do perchance discover it, they will not be able to make anything out of it. But the chances are good that these records will be found and that they can be interpreted.”



COMPLETE LIST OF CONTENTS

The contents of the Westinghouse Time Capsule fall into five groupings:

I. **SMALL ARTICLES OF COMMON USE** that we wear or use, or which contribute to our comfort, convenience, safety, or health. About 35 in number, these articles are separately described and pictured in the microfilm essay. In addition, labels and descriptions are wrapped with each.

II. **TEXTILES AND MATERIALS.** About 75 in number, these comprise swatches of various types and weaves of cloth, samples of alloys, plastics, cement, asbestos, coal, etc. Each is described in the microfilm essay, and a further description of the composition, nature and use is wrapped with each sample.

III. **MISCELLANEOUS ITEMS.** Seeds, books, money, type, special texts, etc.

IV. **AN ESSAY IN MICROFILM,** comprising books, speeches, excerpts from books and encyclopaedias, pictures, critiques, reports, circulars, timetables and other printed or written matter; the whole producing in logical order a description of our time, our arts, sciences, techniques, sources of information and industries. The essay, divided into fifteen sub-sections, contains the equivalent of more than 100 ordinary books; a total of more than 22,000 pages, more than 10,000,000 words and 1,000 pictures. A microscope is included to enable historians of the future to read the microfilm; also included are instructions for making larger reading machines such as those used with microfilm in modern libraries.

V. **NEWSREEL.** Characteristic or significant scenes in sound film prepared by RKO-Pathé Pictures, Inc. for the Time Capsule. Instructions for making a suitable projection machine to use this film are included in the microfilm Micro-File.

Details appear on the following pages, in the order above described. NOTE: Where several competitive items of equal archaeological value were available, but only one could be included, the item selected was chosen by lot. The name of the maker, when given in the following list, is provided only for type and style identification. Choice of any article for the Time Capsule is not to be interpreted either as a special endorsement of that article or a reflection on the quality of any competing article.

I. ARTICLES OF COMMON USE

Contributing to Convenience, Comfort, Health, Safety:

- Alarm clock
- Can opener
- Eyeglasses, bifocals (Bausch & Lomb)
- Fountain pen (Waterman)
- Mazda electric lamp (Westinghouse, 60 watt, 110 volt)
- Mechanical pencil (Waterman)
- Miniature camera (Eastman, Bantam K.A. special f.4.5. lens)
- Nail file
- Padlock and keys (The Yale & Towne Manufacturing Company)
- Safety pin
- Silverware—knife, fork, spoon (Heirloom plate, Grenoble pattern, by Wm. A. Rogers Ltd., Oneida Ltd. Successor)
- Slide rule (Keuffel & Esser) (Also instructions for use)
- Tape measure (Keuffel & Esser)
- Tooth brush
- Tooth powder in small container
- Transmitter and receiver of ordinary handset telephone
- Watch (small wrist watch for woman)
- Westinghouse Sterilamp (bactericidal)

For the Pleasure, Use, and Education of Children

- Boy's toy—a mechanical, spring propelled automobile
- Girl's toy—a small doll
- Mickey-Mouse child's cup of plastic material. (Bryant Electric Company)
- Set of alphabet blocks

Pertaining to the Grooming and Vanity of Women

- Woman's hat, style of Autumn, 1938 (designed specially by Lilly Daché)
- Cosmetic make-up kit (Elizabeth Arden Daytime-Cyclamen Color Harmony Box, including two miniature boxes of face-powder, lipstick, rouge, eye shadow)
- Rhinestone clip (purchased at Woolworth's)

Pertaining Principally to the Grooming, Vanity or Personal Habits of Men

- Container of tobacco
- Electric razor and cord (Remington-Rand Close Shaver with Westinghouse motor, General Shaver Corp.)
- Package of cigarettes
- Safety razor and blades (Gillette Aristocrat one-piece razor, Gillette Safety Razor Co.)

- Smoking pipe (Drinkless Kaywoodie, Kaywoodie Company)
- Tobacco pouch, closed with zipper (Alfred Dunhill of London)

Pertaining to Games Pictured and Described in Micro-file:

- Baseball
- Deck of cards
- Golf ball (Kro-flite, A. G. Spalding & Bros.)
- Golf tee
- Poker chips

II. MATERIALS OF OUR DAY

Fabrics:

- Asbestos cloth (Johns-Manville)
- Cotton swatches (Jas. McCutcheon & Co.)
- Glass fabric samples (Westinghouse glass tape)
- Linen swatches (Jas. McCutcheon & Co.)
- Rayon swatches (Du Pont and Celanese)
- Rubber fabrics (Lastex cloth, United States Rubber Products, Inc.)
- Silk swatches (Jas. McCutcheon & Co.)
- Wool swatches (American Woolen Company)

Metals and Metallic Alloys:

- Hipernik (Westinghouse)
- Aluminum (Commercially pure sample from Aluminum Company of America)
- Aluminum high-strength alloy (ST 37 alloy furnished by Aluminum Company of America)
- Carbon steel (Electro Metallurgical Company)
- Chromium (Electro Metallurgical Company)
- Copper (Westinghouse Research Laboratories)
- Ferromanganese (Electro Metallurgical Company)
- Ferrosilicon (Electro Metallurgical Company)
- Ferrovandium (Electro Metallurgical Company)
- Iron (Pure sample from Westinghouse Research Laboratories)
- Magnesium high-strength alloy (Dowmetal, furnished by Dow Chemical Company)
- Manganese (Electro Metallurgical Company)
- Silicon (Electro Metallurgical Company)
- Stainless steel (Electro Metallurgical Company)
- Temperable copper (Cupaloy, furnished by Westinghouse)
- Hipersil (Westinghouse)
- Tungsten wire (Filament for Westinghouse Mazda electric lamp)

Non-Metallic Materials and Substances:

- Airplane pulley of laminated phenol plastic Micarta—
Westinghouse
- Anthracite coal (sealed in glass, furnished by Anthracite
Institute)
- Artificial cellulose sponge (E. I. duPont de Nemours & Co.,
Inc.)
- Artificial leather
- Asbestos shingle (furnished by Johns-Manville)
- Beetleware—a specimen of urea plastic (Westinghouse)
- Carborundum (The Carborundum Company)
- Glass wool
- Linen packing thread
- Leather samples—tanned cowhide, genuine morocco (goat-
skin)
- Lucite—a specimen of methyl methacrylate plastic (du
Pont)
- Manufactured rubber (tire section furnished by Fisk Tire
Co., Inc.)
- Micarta—a specimen of phenol plastic (Westinghouse)
- Noiseless gear of laminated phenol plastic Micarta—
Westinghouse
- Paper—four kinds of permanent rag paper used in money,
books, permanent ledgers and for special wrapping
- Portland Cement (Sample furnished by Portland Cement
Co., sealed in glass)
- Raw rubber (Furnished by United States Rubber Products,
Inc.)
- Transite—a specimen of material made of asbestos and
cement (Johns-Manville)
- Rock wool (Johns-Manville)
- Synthetic "rubber" (Neoprene Chloroprene, furnished
by du Pont)

III. MISCELLANEOUS ITEMS

Money of the United States:

- Dollar bill, silver dollar, half dollar, quarter dollar, dime,
nickel, penny

Electrical Items:

- Electric wall switch (Bryant Electric Company)
- Electric lamp socket (Bryant Electric Company)

Seeds (Selected and furnished by U. S. Department of Agriculture—All samples sealed in glass tubes)

- Wheat, corn, oats, tobacco, cotton, flax, rice, soy beans,
alfalfa, sugar beets, carrots, barley

Books (All other books, reports, etc. reduced to microfilm)
Selected leather-bound rag-paper copy of the Holy Bible
Copy of the Book of Record of the Time Capsule

Type (Supplementary to discussions in Micro-file)
Handset type—Capital and lowercase alphabets of Goudy
Village No. 2 type, 14 point

Linotype—8 point Caslon 13 em slug set on standard Linotype in the shop of the Tuckahoe Record, Tuckahoe, N. Y. The line reads: "This type set by Linotype Machine".

Optical Instrument (Other optical instruments described in Micro-File)

Magnifier and viewer for use with microfilm and newsreel film

Special Texts (Written on permanent paper in non-fading ink)
Special messages from noted men of our time (Albert Einstein, Robert A. Millikan, Karl T. Compton, Thomas Mann)

Certificate of Official Witnesses at packing of the Westinghouse Time Capsule

Message from Dr. Thornwell Jacobs, President of Oglethorpe University

List of Westinghouse men whose suggestions, guidance, engineering and other special skills made the Time Capsule possible.

IV. SCENARIO OF MICROFILM SEQUENCES

Introduction

1. Greetings
2. Directions for making a larger projection machine

I. Aids To Translation

3. Explanation of keys
4. Fable of the North Wind and the Sun in Twenty Languages
5. The Lord's Prayer in 300 Languages
6. The Practical Standard Dictionary: New York: Funk & Wagnalls: 1938
7. Dictionary of Slang and Colloquial English, by John S. Farmer and W. E. Henley: New York: E. P. Dutton & Co.: 6th Impression

II. Where We Live and Work

8. Introduction
9. Individual Homes: Architectural Forum: pages from various 1937-1938 issues

10. Apartments, by Harvey Wiley Corbett: En. Britannica Vol. 20, pp. 870-881
11. The Trailer: catalogue of Kozy Coach, Kalamazoo, Mich., 1938
12. Offices, by Harvey Wiley Corbett: En. Britannica, Vol. 2, pp. 274-287, inc.
13. The Story of Rockefeller Center, 1938
14. Office Equipment, by W. H. Leffingwell: En. Britannica; Vol. 16, pp. 712-719 incl.
15. Office Machines: catalogue of International Business Machines Corp., 1938
16. Factories: En. Britannica, Vol. 9, pp. 29-31, incl.
17. Photograph of Westinghouse East-Pittsburgh Works
18. Photograph of Westinghouse Transformer Works, Sharon, Pa.
19. Photograph of Westinghouse Elevator Works, Jersey City, N. J.
20. Photograph of Headquarters of General Motors Corp., Detroit, Mich.
21. Photograph of First stages on assembly belt in General Motors factory
22. Photograph of press that makes automobile tops out of cold steel
23. Photograph of rolling cold steel, American Iron & Steel Institute
24. Photograph of pouring molten iron into a furnace, Amer. Iron & Steel Institute

III. Our Arts and Entertainment

25. Introduction
26. The Arts, by Hendrik Willem van Loon: New York: Simon & Schuster
27. Painting: Encyclopaedia Britannica, Vol. 17, pp 36-65
28. Arozco Frescoes
29. "Guernica"—Pablo Picasso
30. "American Landscape"—Charles Sheeler
31. "Summer Wind"—Alexander Brook
32. "Promenade"—Charles Burchfield (1928)
33. "Lower Manhattan"—John Marin (1920)
34. "Persistence of Memory"—Salvador Dali (Catalan)
35. "Daughters of the Revolution"—Grant Wood (American 1932)
36. "Composition Black, White & Red"—Piet Mondrian (Dutch)
37. "Dr. Meyer-Hermann"—Otto Dix

NOTE: Wherever reference is made to the *Encyclopaedia Britannica*, we have used the 14th Edition—1937

38. Sculpture: Encyclopaedia Britannica, Vol. 20, pp. 198-231
39. Music: Encyclopaedia Britannica, Vol. 16, pp. 3-24 (with score)
40. Harmony: Encyclopaedia Britannica, Vol. 11, pp. 203-212
41. Finlandia, by Jean Sibelius
42. The Stars and Stripes Forever, by John Philip Sousa
43. The Flat-Foot Floogee, by Slim Gaillard, Slam Stewart and Bud Green
44. Photograph of Arturo Toscanini, one of our great directors, conducting a symphony orchestra
45. Photograph of a string quartet
46. Photograph of vocal soloist accompanied by orchestra, with audience in foreground
47. Photograph of diners dancing to the accompaniment of an orchestra in a famous New York night club
48. Catalog of instruments, showing construction, range and how to manipulate
49. Literature: introduction
50. The Essay: Encyclopaedia Britannica, Vol. 8, pp. 716-717
51. Freud, Goethe, Wagner, by Thomas Mann: New York: Alfred A. Knopf: 1937
52. The Short Story: Encyclopaedia Britannica, Vol. 20, pp. 580-583
53. Verse: Encyclopaedia Britannica, Vol. 23, pp. 96-98
54. The Novel: Encyclopaedia Britannica, vol. 16, pp. 572-577
55. "Arrowsmith" by Sinclair Lewis: New York: Grosset & Dunlap: 1925
56. "Gone With The Wind" by Margaret Mitchell: New York: Macmillan: 1938
57. "The Theater" by George Jean Nathan: Encyclopaedia Britannica, Vol. 22, pp. 21-41
58. Best Plays (1936-1937) by Burns Mantle: New York: Dodd, Mead
59. Motion Pictures, by Terry Ramsaye: Encyclopaedia Britannica, Vol. 15, pp. 854-871
60. Music Hall Program for "You Can't Take It With You", Sept. 1, 1938
61. Radio: Encyclopaedia Britannica, Vol. 23, pp. 663-668
62. The Story of Radio, by Orrin E. Dunlap, Jr.; New York: Dial Press, 1935
63. A radio studio, National Broadcasting Company, New York City
64. Radio Corporation of America Building, Rockefeller Center, New York

65. Master switchboard of the National Broadcasting Company
66. Director of radio dramatic program, National Broadcasting Company
67. Radio broadcasting antenna
68. Radio actors "on the air"
69. Standard Bridge Rules: R. H. Macy & Co., New York, 1938
70. Photo of a bridge tournament: Acme
71. Hoyle's Card Rules: R. H. Macy & Co., New York, 36th Edition, 1938
72. Typical poker scene: Acme
73. Spalding's Rules of Golf—1938
74. Typical golf match: Acme
75. Spalding's Football Rules—1938
76. Scene from football game
77. Spalding Baseball Rules—1938
78. Scene from baseball game

IV. How Information Is Disseminated Among Us

79. General Introduction
80. Magazines: Introduction
81. Saturday Evening Post, May 7, 1938
82. Collier's, Sept. 3, 1938
83. Ladies' Home Journal, September 1938
84. Woman's Home Companion, September 1938
85. Vogue, September 1, 1938
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99. Harper's Magazine, August 1938
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101. Scientific American, September 1938
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200. Photograph of tightening a "steel spider" at the Westinghouse East Pittsburgh Works
201. Photograph of assembling giant mill motors at the Westinghouse East Pittsburgh Works
202. Photograph of Ignitron tubes in the Westinghouse Research Laboratories

203. Photograph of testing a grid-glow tube in the Westinghouse Research Laboratories
204. Photograph of a lamp machine in the Westinghouse Lamp Works, Bloomfield, N. J.
205. Photograph of bottom one-third of 800-foot vertical antenna of Westinghouse radio station KDKA, Pittsburgh, Pa.
206. Photograph of a 1938 hostess inspecting complete meal cooking in Westinghouse Automeal Roaster at Merchandise Works, Mansfield, Ohio
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263. Iron, Iron and Steel, Iron in Art: Encyclopaedia Britannica, Vol. 12, pp. 645-682 incl.
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266. Metalliferous Mining: Encyclopaedia Britannica, Vol. 15, pp. 544-551
267. Petroleum: Introduction
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276. Northern Pacific Timetable, Corrected to June 20, 1938, F. 5111
277. Southern Pacific Timetable, Aug. 15-Sept. 1938, Form A
278. Sante Fe Timetable, Corrected to August 7, 1938
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281. Textiles and Embroideries: Encyclopaedia Britannica, Vol. 22, pp. 1-6
282. Weaving: Encyclopaedia Britannica, Vol. 23, pp. 455-466
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285. Designing Women, by Margaretta Byers with Consuelo Kamholz: New York: Simon & Schuster: 1938
286. Women's Wear Style Sheet, 1938
287. Women's Wear for September 1, 1938

288. Fall Textures in duPont Rayon (swatches included in Capsule as objects) 1938

XII. *New York World's Fair 1939*

289. Introduction
290. Message from Grover Whalen, President of the World's Fair
291. New York, the World's Fair City
292. World's Fair Bulletin A Year from Today
293. World's Fair Bulletin: Participation Issue
294. World's Fair Bulletin for June, 1938
295. List of Officers and Department Heads of the World's Fair

XIII. *The Objects in the Capsule*

296. Introduction and List

XIV. *The Men Who Made the Capsule*

297. List

XV. *How We Appear, Talk and Act; and Scenes of Our Day*

298. Introduction
299. Technology of Amateur and Professional Motion Pictures; Encyclopaedia Britannica, Vol. 15, pp. 867-871
300. Motion Picture Technology: Encyclopaedia Britannica, Vol. 15, pp. 854-867
301. Photoelectricity: Encyclopaedia Britannica, Vol. 17, pp. 788-793
302. Production and Projection of the Motion Picture, by Terry Ramsaye, Editor, Motion Picture Herald
303. How to Build a Projection Machine: (diagrams and photos).
304. A projection machine.

V. NEWSREEL

Characteristic or Significant Scenes in Sound Film, Prepared for the Time Capsule by RKO-Pathé Pictures. Instructions for Making a Suitable Projection Machine for the Use of This Film are Included in Microfilm Micro-File.

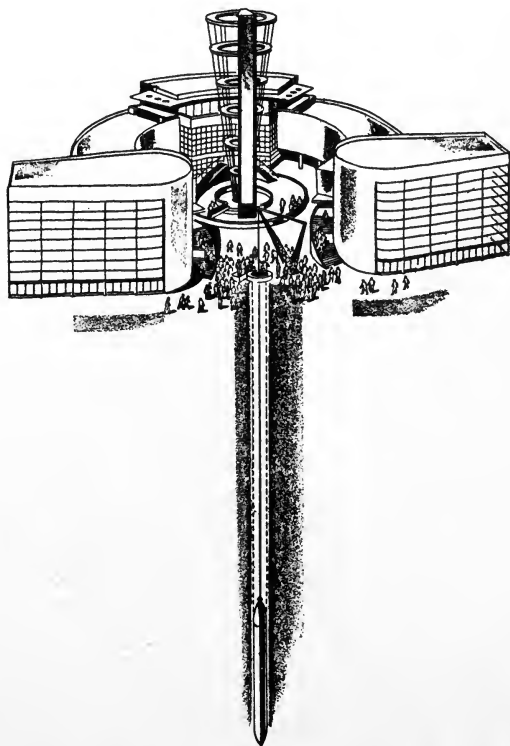
The newsreel runs about 15 minutes. It comprises the following scenes:

1. Franklin D. Roosevelt, President of the United States, speaking at Gettysburg, Pennsylvania, July 3, 1938, on occasion of the 75th anniversary of the celebrated battle of the United States Civil War. Veterans of both sides, attending their final reunion, are present.
2. Howard Hughes, celebrated aviator, who made "Around-the-World-Flight" as "Air Ambassador"

for New York's World Fair 1939, in three days, 19¼ hours, July 1938.

- a. Plane flying over New York City's skyscrapers as Hughes sets out on first lap.
 - b. Hughes' return at Floyd Bennett Field, New York City, after completing flight.
 - c. Hughes' New York reception, showing enthusiastic crowds lining the streets and paper showering down from skyscrapers.
3. Jesse Owens, American negro athlete, winning 100 meter dash in 1936 Olympic games.
 4. Collegiate football: Harvard-Yale, November 1936 at "Yale Bowl," New Haven, Conn. Yale wins 14-13.
 5. Baseball: Big League—All-Star Game at Crosley Field in Cincinnati, Ohio. 28,000 spectators—July 1938. Nationals defeat Americans 4-1.
 6. United States Pacific Fleet setting out for six weeks of maneuvers, showing battleships in formation off Long Beach, California, in March 1938.
 7. Soviets celebrate International Labor Day, May 1938, in Red Square, Moscow, Russia. Two shots of soldiers marching.
 8. Greatest demonstration of military prowess in the United States since the World War, at Fort Benning, Georgia, April 1938, showing tanks and other war machines.
 9. Bombing of Canton, typical episode in the undeclared war between China and Japan. Canton, China, June 1938.
 - a. Pathe cameraman, A. T. Hull, wearing helmet, in cockpit of plane, about to take-off to make pictures.
 - b. Smoke rising from explosions off in distance.
 - c. Terror-stricken civilians in street.
 - d. Red Cross men and women, many of whom are injured while ministering to the victims.
 10. Fashion Show at Miami, Florida, April 1938.
 - a. General view of luxurious scene in which the audience is seated around a swimming pool, watching models displaying advance summer fashions.
 - b. Two girls in long beach coats.
 - c. Two girls in long beach coats opened to reveal bathing suits, wearing enormous straw hats.
 - d. Afternoon dress.
 - e. Flowered print afternoon dress with large hat.
 - f. Another afternoon dress with brilliantly colored accessories, and large hat.

11. Preview of World's Fair—1939: May, 1938.
- Motorcade of nearly 500 vehicles and floats, including the prize-winning Westinghouse float, going up a street in downtown Manhattan between sidewalks lined with crowds, under shower of paper.
 - Sports float with Babe Ruth, baseball hero.
 - Motorcade entering partially completed Fair grounds.
 - Fiorello laGuardia, Mayor of New York City, and Grover A. Whalen, President of the Fair, in reviewing stand at Fair grounds.
 - "Theme Float" bearing replica of Trylon and Perisphere.



*The Time Capsule under the Westinghouse World's Fair Building.
Latitude $40^{\circ} 44' 34''$.089 north of the Equator; Longitude $73^{\circ} 50' 43''$.842 west of Greenwich*

