

## **FSC-2, H.T.E. HERTZBERG ANTHROPOMETRY PAPERS**

**Collection Number:** FSC-2

**Title:** H.T.E. Hertzberg Anthropometry Papers

**Dates:** 1930-1976

**Creator:** Hertzberg, H. T. E.

**Summary/Abstract:**

The H.T.E. Hertzberg Anthropometry Papers document the career of anthropologist Hans Theodore Edward Hertzberg, who specialized in the study of human body measurements (anthropometry). The collection includes books, journals, articles, technical report, personal correspondence, and minutes for various meetings covering the period 1930-1976.

**Quantity/Physical Description:** 12 linear feet

**Language(s):** English

**Repository:**

Special Collections and Archives, University Libraries, Wright State University, Dayton, OH 45435-001, (937) 775-2092

**Restrictions on Access:** There are no restrictions on accessing material in this collection.

**Restrictions on Use:**

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**Preferred Citation: (Required)**

[Box #, Folder #], FSC-2, H.T.E. Hertzberg Anthropometry Papers, Special Collections and Archives, University Libraries, Wright State University, Dayton, Ohio

**Acquisition:**

The Hertzberg Papers were donated in several parts. The first items were given by H.T.E. Hertzberg in 1978 as he moved from Yellow Springs, Ohio to Ashland, Oregon. Additional materials were donated by Mr. Hertzberg in December 1987. Correspondence notes a third donation made by Hans in June of 1988 and a fourth donation given by Joan, his wife, in 1995.

**Separated Material:**

Books received with the collection have been cataloged and are available through the Dunbar Library.

**Revisions:** Update to EAD format, September 2011.

**Related Material:**

FSC-1, Ross A. McFarland Collection in Aerospace Medicine and Human Factors Engineering

**Additional Sources:**

Hertzberg, H. T. E., "Average Man is a Fiction: Range of Sizes is Key to Efficient Work Places," Dayton, OH: Wright-Patterson Air Force Base, 1970

**Processed by:** Elli Bambakidis, March 1982. Revised in 2004 by Timothy Binkley. Revised by John Armstrong, September 2011.

**Arrangement:**

The collection is arranged in four series.

Series I: Correspondence and Technical Reports

Series II: Human Factors Society

Series III: Society of Automotive Engineers (S.A.E.) Minutes and Correspondence

Series IV: Reports

**Biographical/Historical Note:**

H.T.E. Hertzberg (b.1905 in San Antonio, TX) was the senior physical anthropologist for the United States Air Force from 1946 until his retirement in 1972. At the Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, he practiced engineering anthropology, measuring human body-size, mobility and strength, and utilizing such detailed data in the design of cockpits, seats, oxygen masks, goggles, helmets, gloves and other types of flying equipment and protective clothing. He also established the criteria for the design of the anthropomorphic dummy, now widely used in crash-test research.

Hertzberg received his A.B. from Rice Institute in 1927 and his A.M. from Harvard in 1942. Between those years he graduated from the U.S. Army Air Corps Flying School at Kelly Field, Texas, worked in engineering and aerial mapping, undertook graduate studies at the University of Texas and at Harvard, and did field and laboratory research at the Universities of Texas, Harvard, and Kentucky. He joined the Aerospace Medical Research Laboratory as chief of the Anthropology Branch after military service in World War II.

H.T.E. Hertzberg initiated and conducted programs that resulted in two significant books: *Anthropometry of Flying Personnel – 1950* (1954) and *Anthropometric Survey of Turkey, Greece and Italy* (1963). He was author or co-author of some 70 research papers or chapters in various governmental and non-governmental reports and publications.

Until retirement, he was a member of the S.A.E. (Society of Automotive Engineers) Committee on Physical Anthropology, National Research Council. For seven years he was a member, and for five years Chairman, Committee on Anthropometry, Aerospace Medical Panel, AGARD-NATO. He was a Fellow of the Human Factors Society.

**Scope and Content:**

The H.T.E. Hertzberg Anthropometry Papers illustrate the widespread activities of researchers at the Wright-Patterson Aerospace Medical Research Lab, their interaction with workers at other government installations, both military and civilian, and their collaboration, through grants, contracts, consultation and research participation, with groups from university and industrial laboratories. Specifically, it documents, through the professional activities of H.T.E. Hertzberg, the development of the new fields of anthropometry and human factors engineering. The collection is divided into four series.

Series I, Correspondence and Technical Reports, consists of general correspondence, reports authored or co-authored by Mr. Hertzberg, and a number of reports on Anthropometry.

Series II, Human Factors Society, contains general information about the Human Factors Society including information about activities of the group from 1957-1974. Also included are the by-laws and several newsletters of the Southern Ohio Chapter of the Human Factors Society.

Series III, S.A.E. Minutes and Correspondence, contains minutes of S.A.E. sub-committee meetings from 1967 to 1974. These sub-committees include those for Human Factors Engineering, the Crash Dummy Task Force, and others. Also included in this series is correspondence and miscellaneous S.A.E. material from 1968 to 1971.

Series IV, Reports, contains a variety of Anthropometry reports from different sources ranging in dates from 1942 to 1976. The reports are grouped according to source which include: Research Project, Dr. G. M. Morant Reports, EPA Reports, Military Reports (Specifications), Air Force Reports, Army Reports, Navy Reports, general reports from a variety of U.S. companies, and non-U.S. reports, primarily from the United Kingdom, France, and Australia.

**Subject Terms****Persons/Families**

Hertzberg, H. T. E., 1905-

**Organizations/Corporate Names**

Air Force Aerospace Medical Research Laboratory (U.S.)

**Places**

Dayton (Ohio)

Wright-Patterson Air Force Base (Ohio)

**Subjects**

Anthropometry

Body Size

Aviation Medicine

**Material Types**

Technical Reports

Correspondence  
Test Data

**Occupations**  
Physical Anthropologist

**Collection Inventory**

**Series I: Correspondence and Papers**

<u>Box</u>	<u>File</u>	<u>Description</u>	<u>Date</u>
1	1	Correspondence	1957-1974
		<b>Technical Reports</b>	
	2	Angular Fields of View through the A-1 Gunsight in the P-80 Cockpit Modified for Ejection (TSEAA-695-73)	Dec. 1946
	3	Post War Anthropometry in the Air Force by H.T. E. Hertzberg	1948
	4	Human Exposures to Linear Deceleration by Maj. John Paul Stapp (AF Tech. Report 5915)	Jun. 1949
	5	Applied Anthropometry of the Hand by Gilbert S. Daniels and H.T.E Hertzberg	1952
	6	Review of Escape Hatch Sizes for Bailout and Ditching by Charles B. White, Paul J. Johnson, and H.T. E. Hertzberg (WCRD Tech. Note 52-81)	Sep. 1952
	7	Abstract – Some Contributions of Air Force Anthropology to Academic Physical Anthropology by H.T.E. Hertzberg & Frank P. Saul	Mar. 1954
	8	Anthropology in Workspace Design by H.T.E. Hertzberg & Frank P. Saul	Aug. 1954
	9	The Anthropometry of Working Positions by H.T.E. Hertzberg, Irvin Emanuel, & Milton Alexander	Aug. 1956
	10	Minutes of the Air Force Personal Equipment Team Meeting	Oct. 1957
	11	Annotated Bibliography of Applied Physical Anthropology in Human Engineering, Edited by H. T. E. Hertzberg	May 1958
	12	Minutes of the 6 <sup>th</sup> Annual Air Force Personal Equipment Team Meeting	Dec. 1958
	13	Dynamic Anthropometry of Working Positions by H. T. E. Hertzberg	Sep. 1959
	14	The Biomechanics of Weightlessness by H.T.E. Hertzberg	Jul. 1960
	15	Dynamic Anthropometry of Working Positions by H.T.E. Hertzberg	Aug. 1960

	16	Anthropometric Survey of Turkey, Greece and Italy by H.T.E. Hertzberg et.al.	1963
	17	An 'Anvil' for Sliding-Caliper Repair by H.T.E. Hertzberg	Nov. 1966
	18	The Conference on Standardization of Anthropometric Techniques and Terminology by H.T.E. Hertzberg	Jan. 1968
	19	The Anthropology of Anthropomorphic Dummies by H.T.E. Hertzberg	Feb. 1970
	20	Foot Forces Exerted at Various Aircraft Brake-Pedal Angles by H.T.E. Hertzberg & Francis E. Burke	1971
	21	Some Notes on Anthropometric Data on American Children by H.T.E. Hertzberg (Draft)	Undated
	22	Publications and unpublished reports by Dr. Albert Damon	1942-1970
	23	Publications and unpublished reports by Dr. Albert Damon	1942-1970

### **Series II: Human Factors Society**

<u>Box</u>	<u>File</u>	<u>Description</u>	<u>Date</u>
2	1	Ad Hoc Committee on Fellows	1965-1970
	2	Activities	1957-1967
	3	Activities	1968-1974
	4	General Correspondence	1967-1974
	5	Child Restraint Systems Test Procedure	1945, 1968-1972
	6	Human Factors Society, Southern Ohio Chapter – By-Laws and Newsletters	1969

### **Series III: Society of Automotive Engineers (S.A.E.) Minutes and Correspondence**

<u>Box</u>	<u>File</u>	<u>Description</u>	<u>Date</u>
3	1	Minutes of S.A.E. Sub-Committee Meetings	1967
	2	Minutes of S.A.E. Sub-Committee Meetings	1968
	3	Minutes of S.A.E. Sub-Committee Meetings	1969
	4	Minutes of S.A.E. Sub-Committee Meetings	1970
	5	Minutes of S.A.E. Sub-Committee Meetings	1971
	6	Minutes of S.A.E. Sub-Committee Meetings	1972
	7	Minutes of S.A.E. Sub-Committee Meetings	1973
	8	Minutes of S.A.E. Sub-Committee Meetings	1974
4	1	Crash Test Dummy Sub-Committee Meetings, Correspondence and Reports	1967-1971

	2	Crash Test Dummy Sub-Committee Meetings, Correspondence and Reports	1967-1971
	3	S.A.E Technical Reports – J885a, J906, J921, J941b, J944, J963, J984, J985	
		<b>S.A.E Reports</b>	
	4	A 2 – D Mannikin – The Inside Story, X-Rays Used to Determine a New Standard for a Basic Design Tool	1961
	5	Automobile Driver Eye Position	1965
	6	Human Muscular Restraint During Sled Deceleration	1968
	7	The Eyellipse and Considerations in the Driver's Forward Field of View	1968
	8	The Design and Development of a More Effective Child Restraint Concept	1968
	9	Survey of Research Projects on Human Tolerances to Impact Forces	1968
	10	Computer Assisted Packaging for Driver's Rear Viewing	1968
	11	The Range of Anthropometric Measurements for Asian Populations	1968
	12	Location, Accessibility, and Identification of Controls and Displays in 1969 Passenger Automobiles	1969
	13	Testing Programs and Research on Restraint Systems	1969
	14	Anthropometry (A Review of the State of the Art)	1970
	15	Crash Testing of Humans in Automobile Seats	1970
	16	Anthropometric Golden Shell Models and Their Description by Stereometric Measurements	1974
	17	Correspondence and Miscellaneous SAE materials	1968-1971

#### **Series IV: Reports**

<u>Box</u>	<u>File</u>	<u>Description</u>	<u>Date</u>
		<b>Research Project</b>	
5	1	Men's Body-Measurement Apparel Sizing Project	May 1960
	2	NATO Measuring Techniques	Jul. 1960
	3	Statistics for Functions of Anthropometric Variables	1962
	4	The Modern Computer and Physical Anthropology	1963
	5	Anthropometry of USAF Male Basic Trainees	1968
	6	The Smoothing of Percentiles Using Orthogonal Polynomials	Undated
	7	The Estimation of the Variability of Body Size Data	Undated
		<b>Dr. G. M. Morant Reports</b>	
	8	Age-Height-Weight Standards	Feb. 1946
	9	Anthropometric Problems in the Royal Air Force	1947

	10	Dimensional Requirements for Seats in RAF Aircraft	Feb. 1947
	11	Fitting Trials with Two Different Sized Sets of Battledress	Dec. 1949
	12	Survey of the Heights and Weights of Royal Air Force Personnel	1949-1952
	13	Trials of Dramamine as a Preventative for Air Sickness	Feb. 1951
	14	Critical Dimensions of a Standard helicopter Cockpit	Mar. 1957
	15	The Practical Application of Physical Anthropology	Sep. 1958
	16	A Report on a Survey of Body and Clothing Measurements of Royal Air Force Personnel	Undated
		<b>EPA Reports</b>	
	17	International Guide to Sources of Technical Information - Austria	c.a. 1952
	18	OEEC at Work for Europe	1956
	19	Technical Information – Monthly Bulletin	1956
	20	Fitting the Job to the Worker Seminar	1956
	21	European Productivity – Vol. 24	1957
	22	Fitting the Job to the Worker Seminar	1957
	23	Fitting the Job to the Worker Seminar	1957
	24	Fitting the Job to the Worker Seminar	1958
		<b>Military Reports</b>	
6	1	Military Specification, Cloth, Nylon, Raschel Knit	Feb. 1953
	2	Military Specification – Human Engineering Requirements for Military Systems, Equipment and Facilities	Feb. 1968
		<b>Air Force Reports</b>	
	3	The Design of Turret Sighting Panels	Feb. 1943
	4	WCRD 53-7, The “Average Man”?	Dec. 1952
	5	WADC Technical Report 53-12, Anthropometry of WAF Basic Trainees	Jul 1953
	6	Some Basic Concepts and Methods of Applied Anthropometry	Dec. 1954
	7	WADC Technical Report 57-586, A Study of Muscle Forces and Fatigue	Dec. 1957
	8	Percentiles for USAF Height-Weight-Age Study	1959
	9	A Preliminary Survey of Human Factors Personnel	Jan. 1960
	10	WADC Technical Report 60-631, A Head Circumference Sizing System for Helmet Design	Dec. 1960
	11	A Review of the Effects of Weightlessness on Selected Human Motions and Sensations	Apr. 1962
	12	A Study of the Center of Mass of a Man-Seat System During Transient Acceleration	Sep. 1963

	13	Anthropology Branch Review	Nov. 6, 1963
	14	Bibliography of Reports Issued by the Behavioral Sciences Laboratory	1963-1967
	15	An Annotated Bibliography of USAF Physical Anthropology	1960, 1965-1966
	16	Staff Study on Improvement of Personal Flight Safety Equipment	Nov. 1965
	17	USAF Anthropometric Survey Descriptive Data	1967
	18	Human Auditory Response to an Air Bag Inflation Noise	May 1969
	19	Industrial Seating	c.a. 1970
	20	Anthropometry and Bio kinematics of the Hand	Undated
	21	Pilot Seat and Restraining Devices	Undated
		<b>Army Reports</b>	
	22	A Study of the Vehicle ride Dynamics Aspects of Ground Mobility	1965
7	1	Anthropometry of the Latin-American Armed Forces	May 1967
	2	Human Engineering Design Data Digest	May 1975
		<b>Navy Reports</b>	
	3	Maximum Limits of Working Areas on Vertical Surfaces	Apr. 1952
	4	Military Helmet Design	Jun. 1958
	5	A Study to Determine the Relationship Between naval Aircrew Station Dimensions and the Anthropometry of Naval Aviators	1960
	6	Anthropometric Measurements Taken on Incoming Student Naval Aviator and Student Naval Flight Officer Population	1970
	7	Selected Bivariate Anthropometric Distributions Describing a Sample of Naval Aviators – 1964	Mar. 1971
		<b>General Reports</b>	
	8	American Institute for Research – Reports & Correspondence	1959
	9	Human Engineering the Seat	Oct. 1960
	10	Andrometry: A Practical Application of Coordinate Anthropometry in Human Engineering	Apr. 1961
	11	Design Analysis of Anthropometric Devices	Apr. 1964
	12	Anthropometric Measurements (Hand and Arm) of Wiring Operators for Biomechanics Study	Jun. 1964
	13	Alderson Research Laboratory – Crash Dummy Research and Correspondence	1966
	14	Application of Crash Research to Combat Vehicle Operations	Mar. 1967



	15	Compendium of Dimensions for the Construction of a 95 Percentile Male Test Dummy and Comparison to Dimensional Data from Other Sources	Mar. 1968
	16	Compendium of Dimensions for the Construction of a 5 Percentile Female Test Dummy and Comparison to Dimensional Data from Other Sources	Mar. 1968
	17	Bibliography on Motor Vehicle & Traffic Safety	Mar. 1968
	18	Compilation of Anthropometry of Sub-Adults in the United States (Mostly 18-19 Years of Age)	Undated
	19	An Overall View of Personality for the Human Engineer	Oct. 1968
	20	The Functional Body Measurements of School Age Children	1954
	21	The Effect of Tool Handle Size and Shape on Gripping Force	Jun. 1963
	22	Ergonomic Needs in Developing Countries	Sep. 1967
	23	Article – Efficient Seating Habits	Undated
		<b>Non-United States Reports</b>	
8	1	Limits of Body Measurements Used in Selecting Flying Personnel for the Air Forces of NATO Countries	Jun. 1955
	2	RCAF Anthropometrical Survey Based on Probability Sample of 314 Pilots and 290 Navigators Stratified by trade and Command	1963
	3	A Comparison of Seven Anthropometric Variables of American, British and Canadian Pilots	Apr. 1965
	4	The Application of Engineering Techniques to Body Measurement and Pattern Drafting for Aircrew Functional Clothing	Aug. 1966
	5	An Anthropometric Survey of 200 RAF and RN Aircrew and the Application of the Data to Garment Size Rolls	Jul. 1968
	6	An Anthropometric Survey of 2000 Royal Air Force Aircrew, 1970/1971	Sep. 1973
	7	Three-Dimensional Shape-Sensing and Reproduction of Limbs and Limb Remnants	1975
	8	School Furniture Stand and Sitting Postures	1976
	9	Body Measurements of Male Workers in Textile Mills in Bombay	1964
	10	Anthropometric Study (German to English Translation)	1965
	11	Estimated Body Dimensions of the Adult Male Jewish Population of Israel	Jun. 1965
	12	Australian Army Anthropometric Survey – Body Dimensions, 1970	1970
	13	Circadian Variations in Performance, Psychological Ratings, Catecholamine Excretion, and Urine Flow During Prolonged Sleep Deprivation	Sep. 1970

	14	Effects of Nicotinic Acid Combined with a Tranquillizer (Hydroxyzine) on Serum Lipid Levels and Urinary Catecholamine Excretion in Geriatric Patients	Nov. 1970
	15	A Synopsis of Ecology and Psychiatry: Some theoretical Psychosomatic Considerations, Review of Some Studies and Discussion of Preventive Aspects	Nov. 1972
	16	Effects of Coffee and Caffeine on Sympathoadrenomedullary Activity, Blood Lipids, Psychological Ratings and Performance	Mar. 1973
	17	Analysis of Urinary Catecholamines and an Improved Auto-Analyzer Fluorescence Method	Jun. 1973
	18	Die Mechanik des Stabhochsprungs	1969
	19	Biostereometrics '74	Sep. 1974
		<b>Other Information</b>	
9	1	Folia Antropologica, Caracas	1960
	2	Patent for Invention – Improvements Applied to the Means of Distributing Electrical, or Thermal, Energy to the Surface of a Body, Especially of a Living Being	Aug. 1961
	3	South Korean Data (Korean Language Document)	1961
	4	Anthropometry of Japanese Pilots (Japanese Language Document)	Mar. 1962
	5	Determination of Inertial Characteristics of the Human Body	Undated
	6	Vliegmedisch Keuringsboek	Undated
	7	Bibliography of Sources	1976
	8	Correlation of Ratios and Correlation Coefficients for “Basic Twelve” Dimension	Undated
	9	Bushman of Africa articles	1974