
Guide to the William Webster Hansen Papers

Collection number: SC 004

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Descriptive Summary

Title: William Webster Hansen papers

Dates: 1925-1945

Collection number: SC 004

Creator: Hansen, W. W. (William Webster), 1909-1949

Collection Size: 7.5 linear ft.

Repository: Stanford University. Libraries. Dept. of Special Collections and University Archives.

Languages: Language: English

Access

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Preferred Citation

[Identification of item], William Webster Hansen papers, SC 004. Stanford University Archives, Stanford, Calif.

Provenance

Gift of Olive Ross, 1955, and Robert Hofstadter, 1992.

Biography

William Webster Hansen was Professor of Physics and Director of the Microwave Laboratory at Stanford University, 1929-1949.

Scope and Content of Collection

Hansen's professional and research papers include correspondence, manuscripts, research notebooks, lecture notes, unpublished studies and notes on various experiments and scientific developments such as radar, the rhumbatron, the klystron, radiation and microwave mechanics. Also included are Hansen's account of the development of the klystron tube, reports of the first linear accelerator at Stanford, his M.I.T. lectures on microwave physics, patents, scrapbooks, and photographs.

Box 1, Folder 1 **ENGINEERING & MECHANICS NOTES, 1930 -**

Scope and Content Note

lecture notes, problems & exams

Box 1, Folder 2 **ANALYTICAL MECHANICS, W. W. HANSEN, PHYSICS DEPT.**

Scope and Content Note

probably lecture notes

Box 1, Folder 3 **PROBLEMS ON MATH, PHYSICS**

Scope and Content Note

collection of problem sets

Box 1, Folder 4 **"THE RELATION BETWEEN THE CONTINUOUS AND LINE SPECTRA OF X-RAYS FROM THIN TARGETS" By D.L. WEBSTER (DAVID LOCKE) and W.W. HANSEN**

Scope and Content Note

abstract with outline drafted Feb. 14, 1929, calculations, etc.

Box 1, Folder 5 **"A 10cm SIGNAL GENERATOR" by W. W. HANSEN, EDWARD LEONARD GINZTON, & P. KINNEL**

Scope and Content Note

article and handwritten draft, probably a lecture

Box 1, Folder 6 **NOTES ON MATRIX THEORY -at M.I.T.**

Box 1, Folder 7 **NOTES ON DIRAC'S THEORY -at M.I.T.**

Box 1, Folder 8 **PROBLEMS IN WOOD'S ADVANCED CALCULUS**

Box 1, Folder 9 **NOTES ON FERMI STATISTICS; also material on Maxwell statistics.**

Box 1, Folder 10 **NOTES ON QUANTUM MECHANICS INCLUDING KRAMER'S ON SPINORS**

Box 1, Folder 11 **NOTES ON MORSE**

Box 1, Folder 12 **VARIOUS PHYSICS COURSES**

Scope and Content Note

lecture notes (?) and exams

Box 2, Folder 13 **NOTES ON SPECTROSCOPY**

Box 2, Folder 14 **NOTES ON RELATIVITY**

Scope and Content Note

and problems from Physics 239, Spring, 1936

Box 2, Folder 15 **NOTES ON QUANTUM MECHANICS by WILLIAM VERMILLION HOUSTON**

Scope and Content Note

includes notes, probably lecture, for Physics 206, Wave Mechanics, handwritten apparently by Hansen, various other Hansen material

Box 2, Folder 16 **QUANTUM MECHANICS. NOTES FROM ROBERT OPPENHEIMER**

Scope and Content Note

handwritten, title indicates source

Box 2, Folder 17 **NOTES ON BLACK BODY RADIATION FROM EPSTEIN**

Scope and Content Note

Handwritten notes, title indicative of source

Box 2, Folder 18 **IONIZATION THEORY NOTES FROM WEBSTER**

Box 2, Folder 19 **NOTES TAKEN AT MICHIGAN**

Box 2, Folder 20 **HEAVISIDED CALCULUS**

Scope and Content Note

includes notes entitled: "Solution of Oscillating Currents by the Use of Generalized Angular Velocity", and "Coupled Circuit by the Method of Generalized Angular Velocities."

Box 2, Folder 21 **GRADUATE EXAMINATIONS**

Scope and Content Note

handwritten, apparently taken by Hansen ca. 1930

Box 2, Folder 22 **ENGINEERING AND MECHANICS, 1931**

Scope and Content Note

various Physics exams for 1931 and some of Hansen's (probably lecture) notes

Box 2, Folder 23 **PHYSICAL CHEMISTRY NOTES**

Scope and Content Note

notes on Physical Chem and some exam sheets for Chem 171 (1929) and Chem 173 (1930)

Box 2, Folder 24 **BROWN'S HEAT LAB. MANUAL**

Scope and Content Note

various notations by Hansen and problem or outline sheet for Physics 34, Heat Lab

Box 2, Folder 25 **STUDIES FOR GRADUATE EXAMINATION**

Scope and Content Note

notes by Hansen on calculus and physics

Box 3, Folder 26 **NOTES ON MICROSCOPES FOR MEDICAL OPTICS**

Box 3, Folder 27 **COURSE IN ENGINEERING AND MECHANICS FROM WEBSTER**

Scope and Content Note

some, perhaps all (?) material relates to Physics 215, Spring 1925/26

Box 3, Folder 28 **COMPLEX VARIABIES**

Scope and Content Note

handwritten and typed notes

Box 3, Folder 29 **NOTES ON THERMODYNAMICS AND KINETIC THEORY**

Scope and Content Note

probably Hansen's on Physics 211, 1931

Box 3, Folder 30 **NOTES ON KINETIC THEORY FROM D.L. WEBSTER**

Scope and Content Note

Hansen's on Physics 211

Box 3, Folder 31 **VARIOUS PATENTS**

Scope and Content Note

German and American, none by Hansen

Box 3, Folder 32 **PATENTS**

Scope and Content Note

American relating to electronics, copies probably used for reference

Box 3, Folder 33 **BLIND LANDING ARRAY**

Scope and Content Note

reference to some device on which Hansen was working in connection with Sperry Rand Corp.

Box 3, Folder 34 **APPLEGATE'S PATENTS**

Scope and Content Note

various patents by L.M. Applegate

Box 3, Folder 35 **SOME IDEAS ABOUT BALL BEARINGS, Sept. 13, 1944**

Physical Description: photostatic copy of handwritten material

Box 3, Folder 36 **PATENTS BY W.W. HANSEN, VARIAN, SLOAN, SNOW etc.**

Box 3, Folder 37 **REAMER THEORY**

Scope and Content Note

front sheet dated Mar. 18, 1937 is a statement of Hansen's reamer theory; includes various calculations, graphs, etc. all concerned with reamer theory

Box 3, Folder 38 **DIRECTOR, AIR, CALC.**

Scope and Content Note

various calculations, some involved with ballistics

Box 3, Folder 39 **MISC. RADAR**

Scope and Content Note

graphs, calculations, data sheets, etc.

Box 4, Folder 40 **HALF-PLANE DIFFRACTION**

Scope and Content Note

hand-written, entitled: "A New Treatment of the Half-Plane Diffraction Problem"

Box 4, Folder 41 **SEISMOGRAPH PROBLEM**

Scope and Content Note

handwritten material including calculations, graphs, etc. folder dated Sept., 1936

Box 4, Folder 42 **SPACE CHARGE IN THE ATMOSPHERE - undated**

Physical Description: handwritten

Box 4, Folder 43 **APPROXIMATIONS TO BESSEL FUNCTIONS OF HIGH ORDER, 1936**

Box 4, Folder 44 **BRAGG'S LAW**

Scope and Content Note

handwritten, undated material

Box 4, Folder 45 **WORK ON HELIUM SPECTRUM**

Scope and Content Note

at M.I.T., many graphs etc., handwritten material entitled: "Calculation of the Energy Levels of Helium"

Box 4, Folder 46 **ATOMIC ENERGY (?)**

Scope and Content Note

various typed and handwritten sheets

Box 4, Folder 47 **PRELIMINARY WORK ON GREEN'S FUNCTIONS**

Scope and Content Note

typed material entitled: "Abstract" (simple method of finding expansions for Green's Functions occurring in mathematical physics, several new Green's Functions illustrate method), and handwritten material

Box 4, Folder 48 **REENTRANT SPHERE RESONANCE & ETC.**

Physical Description: handwritten

Box 4, Folder 49 **FEED-BACK AMPLIFIERS**

Physical Description: handwritten

Box 4, Folder 50 **LUMPED CONSTANT CALCULATIONS ON RHUMBATRONS**

Scope and Content Note

handwritten, graphs, etc.

Box 4, Folder 51 **TUNING BY BUMPS**

Scope and Content Note

work done Oct. 1938 by Hansen and D.L. Webster

Box 4, Folder 52 **IMPEDANCE MATCHING ON RHUMBATRON**

Physical Description: handwritten

Box 4, Folder 53 **CALCULATIONS ON WAVE GUIDES, April 9, 1939**

Physical Description: handwritten

Box 4, Folder 54 **CURRENT DISTRIBUTION PROBLEM - undated**

Physical Description: handwritten

Box 4, Folder 55 **RADAR ANTENNA THEORY**

Scope and Content Note

handwritten material entitled: "Design of Antennas to Give Prescribed Patterns, Sharp Beams, Focussing by a Cylindrical Lens"

Box 4, Folder 56 **RADAR: SIGNAL-TO-NOISE**

Physical Description: handwritten

Box 4, Folder 57 **MODIFIED SCHMIDT TELESCOPE**

Physical Description: handwritten

Box 4, Folder 58 **MOTION OF WEIGHT WITH ATTACHED ROPE**

Scope and Content Note

"Sleater's Integral" is the title (this may be Integral)

Box 4, Folder 59 **PRELIMINARY CALCULATIONS ON CYLINDRICAL As and CORRESPONDENCE WITH JAMES GWAVA BECKERLY
Summer, 1935**

Physical Description: both handwritten and typed

Box 5, Folder 60 **ANTENNA ARRAYS**

Scope and Content Note

some personal correspondence with Dr. (? H.P.) Westman, 2 abstracts: "A New Principle in Directional Antenna Design" by W.W. Hansen and J.R. Woodyard, original handwritten and typed copy, various other papers and graphs

Box 5, Folder 61 **PRELIMINARY CALCULATIONS ON DIRECTIONAL EFFECTS AND MS**

Scope and Content Note

handwritten material and a typed abstract entitled: "Radiation from an Antenna Over a Plane Earth of Arbitrary Characteristics" by W.W. Hansen and J.G. Beckerley

Box 5, Folder 62[R-2] **ANTENNA DESIGN**

Scope and Content Note

photostatic copy, letter between Hansen and Dr. Carl R. Spangenberg of Stanford University dated 1943

Box 5, Folder 63 **CALCULATIONS ON SPHERICAL-CYLINDRICAL TRANSFORMATIONS AND ON DIRECTIONAL EFFECTS**

Physical Description: handwritten and typed

Box 5, Folder 64 **ELECTROMETER REPRINTS**

Scope and Content Note

correspondence between Hansen and W. Mansfield Clark of Johns Hopkins School of Medicine dated 1937, plus handwritten material

Box 5, Folder 65 **CALCULATIONS FOR GRAPHS**

Scope and Content Note

various graphs and data sheets

Box 5, Folder 66 **ABERRATIONS IN ELECTRON LENSES**

Scope and Content Note

handwritten and one graph

Box 5, Folder 67 **CALCULATION OF MONOTRON SHAPES**

Scope and Content Note

various graphs, data sheets, etc.

Box 5, Folder 68 **NO TITLE**
68[R-8]

Scope and Content Note

unidentified handwritten materials, appears to be in connection with airplane landing control, radar or similar

Box 5, Folder 69 **EXPLORATORY CALCULATIONS ON SPHERICAL EARTH PROBLEM**

Scope and Content Note

handwritten material plus some graphs, some material on "Antenna Practice" etc., 1938

Box 5, Folder 70 **VECTOR EXPANSION OF e^{-ikr}**

Scope and Content Note

mostly at M.I.T. start of rhumbatron, 1933 (includes reject of Hansen article submitted for publication to *The Physical Review*, *Reviews of Modern Physics*, and *Physics* [all the same] entitled: "A New Type of Expansion", plus various handwritten material

Box 5, Folder 71 **RHUMBATRON CALCULATIONS**

Scope and Content Note

various typed and handwritten material

Box 5, Folder 72 **MONOTRON MS**

Scope and Content Note

typed abstract: "On A Simplified Short Wave Oscillator" by Hansen and Russell Harrison Varian & original handwritten

Box 6, Folder 73[M-3] **BEGINNING ON MONOTRON**

Scope and Content Note

various handwritten material, graphs, dated 1937

Box 6, Folder 74[C-6] **RHUMBATRON PAPER PRESENTED TO AMERICAN PHYSICAL SOCIETY June, 1939**

Scope and Content Note

typed and handwritten material and various graphs

Box 6, Folder 75[K-2] **KLYSTRON EFFICIENCY**

Scope and Content Note

graphs and handwritten material dated 1937

Box 6, Folder 76[C-12] **RHUMBATRON PAPER WITH HOLLINGSWORTH**

Scope and Content Note

typed preliminary draft, some graphs and drawings

Box 6, Folder 77[C-14] **RHUMBATRON AS A RESONATOR, MS TO INSTITUTE OF RADIO ENGINEERS**

Scope and Content Note

correspondence with I.R.E. about publication of article entitled: includes drawings, calculations and short biographical note for publisher

Box 6, Folder 78[K-6] **"CURRENT-VOLTAGE-EFFICIENCY CHARACTERISTIC CURVES FOR KLYSTRON OSCILLATORS"**

Physical Description: handwritten abstract and 3 typed copies

Box 6, Folder 79[I-13] **HANSEN-VARIAN AMPLIFIER**

Scope and Content Note

research notes for Spring, 1930, article from *Radio News* February, 1930 entitled: "The Amplifier Steps Out"; various graphs; a letter of correspondence with Sangamo Electric Co. about a certain type of condenser

Box 6, Folder 80[K-8] **RESONANCE FREQUENCY CLOSED LINE**

Scope and Content Note

various handwritten material dated 1938, reply to Hansen's request for booklet on publishing form from American Institute of Physics

Box 6, Folder 81[K-7] **"VERY ROUGH CALCULATIONS ON SELF BUNCHERS"**

Physical Description: handwritten

Box 6, Folder 82[E-1] **SMOOTHING CIRCUITS**

Scope and Content Note

handwritten material and graphs

Box 6, Folder 83[P-14] **"DESIGN OF A SHAKER TRACK"**

Scope and Content Note

handwritten material and many graphs

Box 6, Folder 84[C-16] **QUARTER WAVE LINE**

Scope and Content Note

"On the Resonant Frequency of Closed Concentric Lines", typewritten; "Numerical Example and Estimate of Errors", handwritten; several sheets of calculations

Box 6, Folder 85[K-3] **"CAUSES OF FREQUENCY VARIATION IN KLYSTRON OSCILLATORS"**

Physical Description: typed MS

Box 7, Folder 86[C-15] **RADIATION THROUGH HOLES**

Scope and Content Note

handwritten, entitled: "Calculations for Rand Press Filter and Antenna"; other material dated 1937 and 1938

Box 7, Folder 87[K-5] **CIRCULAR FLOATING ONE**

Scope and Content Note

handwritten, graphs and calculations

Box 7, Folder 88[K-4] **"ON THE ACCELERATION OF CHARGED PARTICLES BY OSCILLATING FIELDS BOUNDED BY GRIDS"**

Scope and Content Note

handwritten abstract and typed copy, several graphs

Box 7, Folder 89[P-13] **"ON THE ABSOLUTE DETERMINATION OF ELECTRICAL UNITS"**

Scope and Content Note

abstract of article supposedly published in *American Journal of Physics* in late 1930s; "Measurement of Current", handwritten abstract and copy; graphs, drawings and etc.

Box 7, Folder **MICROMANIPULATOR PAPER WITH SOME DRAWINGS**

90[-10]

Scope and Content Note

typed paper, purchase orders for parts, folder on Zeiss Micromanipulators, some handwritten material

Box 7, Folder **"ON BAND PASS FILTERS USING RHUMBATRONS"**

91[C-13]

Physical Description: handwritten abstract with typed copy

Box 7, Folder **92INSTITUTE OF RADIO ENGINEERS RADAR PAPER FIGURES**

Scope and Content Note

various drawings, graphs, etc. presumably as indicated by title

Box 7, Folder **"CONCERNING NEW METHODS OF CALCULATION RADIATION RESISTANCE, EITHER WITH OR WITHOUT GROUND"**

93[R-10]

Scope and Content Note

typed paper and note that it formed the basis of a talk to joint meeting of I.R.E. and American section of U.R.S.I. in Washington D.C. May, 1936; other material and letter to editor of proceedings of I.R.E., dated 1936

Box 7, Folder **RADIATION THEORY**

94[R-11]

Scope and Content Note

handwritten, graphs and drafts

Box 7, Folder **RADIATION THEORY**

95[R-12]

Scope and Content Note

notes taken to Washington (typed and handwritten) for U.R.S.I. program in April and May, 1936

Box 7, Folder **"DESIGN OF FLAT SHOOTING ANTENNA ARRAYS" BY HANSEN AND HOLLINGSWORTH, Spring 1938**

96[R-13]

Scope and Content Note

typed article and handwritten copy, much other material

Box 7, Folder **FIELD AT GROUND: CHASING OUT ERRORS**

97[R-14]

Scope and Content Note

also typed abstract entitled: "Directional Characteristics of Any Antenna Over a Plane Earth", and 2 copies; handwritten material; article by Hollingsworth entitled: "Report on Radiation Theory and Sommerfeld Theory"; translation of a German article

Box 8, Folder **NUMERICAL CALCULATIONS FOR FIRST I.R.E. PAPER**

98[R-15]

Scope and Content Note

with original copy of table three; handwritten and typed material, some of handwritten entitled: "Vertical Quarter Wave Antenna With Ground"; graphs, drawings and calculations

Box 8, Folder **"RADIATION FROM ARBITRARY ANTENNA OVER AN EARTH OF FINITE CONDUCTIVITY"**

99[R-16]

Scope and Content Note

typed and handwritten copies of MS for first paper in *Physics*

Box 8, Folder **"PROBABILITIES OF K-ELECTRON IONIZATION OF SILVER BY CATHODE RAYS"**

100[P-9]

Scope and Content Note

MS for paper with Stoddard on line and continuous radiation; also handwritten and typed material including a description of an experiment by Hansen and Stoddard

Box 8, Folder **TERMAN'S PROBLEM ON REFLECTIONS FROM THE IONOSPHERE**

101[P-10]

Scope and Content Note

typed and handwritten material; letter from H. . Westman, secretary of the I.R.E. re: publication of an article on this work

Box 8, Folder **KIRKPATRICK'S SHOTPUT CORRECTION**

102[P-11]

Scope and Content Note

handwritten material, calculations, etc.; typed reference attached and signed P K (possibly Paul Harmon Kirkpatrick)

Box 8, Folder **"J" PHENOMENON**

103[P-12]

Scope and Content Note

handwritten data sheets, several sheets entitled: "Superposition of X-rays" by Gerald L. Pearson and W.W. Hansen

Box 8, Folder **HADLEY REPORT -"Report on Klystron Amplifier Measurements" by Charles F. Hadley, June 30, 1943**

104[K-1]

Box 8, Folder **"CALCULATIONS OF THE TOTAL RADIATION FROM ACCELERATED RAPIDLY MOVING ELECTRONS"**

105[P-8]

Physical Description: handwritten

Box 8, Folder **MEASURE OF TRANSIENT RESPONSE OF AMPLIFIERS**

106-107[I-9]

Scope and Content Note

handwritten, partial title, c. 89 pp (?80); other handwritten material and graphs; originally one unidentified folder, divided into two because of volume

Box 8, Folder 10 **COMPUTATIONS FOR WOODYARD**

Scope and Content Note

handwritten, graphs, data sheets, etc., undated

Box 8, Folder 109[P-8] **RADIATION THEORY**

Scope and Content Note

mostly at M.I.T. and Michigan; handwritten, calculations, graphs, data sheets, etc.

Box 8, Folder 110[C-10] **"ON THE CHARACTERISTICS OF A CERTAIN SHAPE OF RESONATOR"**

Scope and Content Note

handwritten with copy; data sheets, graphs, etc., some dated 1939

Box 9, Folder 111[C-9] **FREQUENCY OF RESONANT CAVITIES**

Scope and Content Note

handwritten entitled: "Magnetic Field with Cylindrical Symmetry"; data sheets, graphs, etc.; most dated June, 1941

Box 9, Folder 112[C-8] **DETAILED CALCULATIONS ON ENERGY LOSS ON REFLECTION - undated**

Physical Description: handwritten

Box 9, Folder 113[C-7a,b,c,d] **UNPUBLISHED PAPERS**

Scope and Content Note

typed; abstract with drawings: "On Band Pass Filters Using Rhumbatrons"; abstract, December, 1937: "On Radiative Rhumbatrons"; MS with graph: "Dielectric Rhumbatrons"; MS, 25 pp.: "A Type of Electrical Resonator"

Box 9, Folder 114 **LIST OF PUBLISHED PAPERS -prepared by F. Black for National Academy of Science**

Physical Description: handwritten

Box 9, Folder 115 **CALCULATIONS & MS FOR "PHYSICS" RHUMBATRON**

Physical Description: handwritten

Box 9, Folder 116 **KINEMATIC DESIGN DRAWINGS**

Scope and Content Note

various drawings, some with notations by Hansen

Box 9, Folder 117 **ELECTROSTATIC FOCUSING AT RELATIVISTIC SPEEDS**

Physical Description: typed, one copy in English, one in French

Box 9, Folder 118 **DIELECTRIC LOSSES OF VARIOUS CONCENTRIC CABLES AT 3000 Mc" by William W. Hansen and Charles H. Pope**

Scope and Content Note

2 copies, typed or mimeographed, paper bears imprint of Sperry Gyroscope Co.

Box 9, Folder 119 **TUBE OPERATING POINTS - March 12, 1945**

Scope and Content Note

interoffice memo by Hansen at Sperry Gyroscope Co., apparently a report with 2 graphs

Box 9, Folder 120 **MICROWAVE INTENSITY NOMOGRAPHS, May 21, 1945**

Scope and Content Note

inter-office memo (mimeographed copy) with graph-data sheets

Box 9, Folder 121 **REPORT ON KLYSTRON AMPLIFIER MEASUREMENTS. by Charles F. Hadley, December 29, 1943**

Scope and Content Note

mimeographed, 23 pp with several data sheets; submitted to Sperry Gyroscope Co.

Box 9, Folder 122 **END-FIRE WAVE GUIDE RADIATORS December 3, 1941**

Scope and Content Note

inter-office memo from M.H. Johnson to R.L. Wathen and W.H. Ratliff (?); typed

Box 9, Folder 123 **RECTIFICATION TEST, January 16, 1942**

Scope and Content Note

Sperry Gyroscope Co. inter-office memo from M.H. Johnson and C.H. Pope to Hansen; typed.

Box 9, Folder 124 **SPHERICAL-CYLINDRICAL TRANSFORMATIONS**

Scope and Content Note

1 handwritten and 2 typed copies of abstract: "Transformations Useful in Certain Antenna Calculations"; correspondence relating to its publication in *Journal of Applied Physics* including galley proof and notification of intent to publish in April, 1937 issue.

Box 9, Folder 125 **VALUES OF P FUNCTIONS**

Physical Description: handwritten data sheets

Box 9, Folder 127 **TABLE OF $e_i(x)$**

Scope and Content Note

mimeographed, notation, interpolated by Hansen from Glaisher's Tables; material relating to Physics 25, Spring, 1930 and 1931 entitled: "Comparison of Electrons and Light"

Box 9, Folder 127 **ON THE RESONANT FREQUENCY OF CLOSED CONCENTRIC LINES"**

Scope and Content Note

handwritten with 2 typed copies; correspondence relating to publication in *Journal of Applied Physics*, Aug. 5, 1938; graphs and one handwritten sheet of calculations (apparently corrections in the article).

MATERIAL RELATING TO HANSEN'S STUDIES AT STANFORD AS A STUDENT

Box 9, Folder 128 **NOTES ON WAVE MECHANICS AND ETC.**

Scope and Content Note

handwritten and undated (although could be 1930 or '31), cover diverse subjects such as and including Heisenberg matrix elements.

Box 9, Folder 129 **NOTES ON PHYSICS 183, Winter 1931-'32**

Scope and Content Note

most are carbons, author unknown, handwritten; some typed, author unknown; handwritten, problem sets, etc.

Box 9, Folder 130 **SUMMARY OF PHYSICS 123**

Physical Description: typed, notation on front cover: not to be removed from the LIBRARY

Box 9, Folder 131 **NOTES ON PHYSICS 123**

Scope and Content Note

appears to be a duplication of folder 129 except problem sets and leading page indicating they belong to Hansen

Box 10, Folder 132 **PROBLEMS FOR PHYSICS 125, Spring, 1934-35**

Scope and Content Note

also some handwritten material designated as problems [note: these are not solutions]; possibly material Hansen may have used as a teaching assistant; unidentified and undated.

Box 10, Folder 133 **"BOUNDARY WAVE PROBLEMS"**

Scope and Content Note

handwritten, unidentified and undated, appears to be Hansen's handwriting

MISCELLANEOUS

Box 10, Folder 134 **Work done by L.H. Franklin (student) for Hansen, includes various loose sheets and diagrams**

Box 10, Folder 135 **Various graphs, data sheets, etc., apparently done by Beckerley in 1940**

Box 10, Folder 136 **Various unrelated handwritten calculations, data sheets, etc., undated and unclassified**

Box 10, Folder 137 **Graphs, most done in 1941**

Box 10, Folder 138 **Handwritten calculations etc., 1940-47**

Box 10, Folder 139 **Various handwritten and typed sheets, one entitled: "Velocity of Light"**

Box 10, Folder 140 **Calculations, graphs., etc.**

Box 10, Folder 141 **Report for Hansen's Physics 250 by T.E. Veltfort (student), completed Dec. 13, 1946**

Box 10, Folder 142 **Various typed reports apparently by Hansen; includes "10 cm Signal Generator" & "A New Type of Variable Stroke Pump", etc.**

Box 10, Folder 143 **FORD "A" MOTOR**

Scope and Content Note

various references to one of Hansen's cars and other things of automotive nature, dated early 1930s.

Box 10, Folder 144 **SPHERE DRAWINGS**

Scope and Content Note

various drawings, calculations, etc.

Box 10, Folder 145 **W. HANSEN MISCELLANEOUS UNSORTED MATERIAL**

Scope and Content Note

includes personal correspondence and other unsorted material

Box 11, Folder 146[K-11] **"AN INFORMAL REPORT ON KLYSTRON RESEARCH SINCE LAST SPRING"**

Scope and Content Note

letter from Hansen to D.L. Webster, 16 typed pages and several photographs

Box 11, Folder 147[K-9A] **KLYSTRONICS LECTURE NOTES 1940**

Scope and Content Note

handwritten, graphs, etc.

Box 11, Folder 148[K-9A] **"KLYSTRON KLASS" 1940**

Scope and Content Note

handwritten, dated for fall, 1940, property of Hansen

Box 11, Folder 149[K-9B] **KLYSTRONICS, M.I.T., 1941**

Scope and Content Note

handwritten, graphs, etc.

Box 11, Folder 150 **HUMBATRONICS, M.I.T. 1941**

Physical Description: handwritten, 6 pages

Box 11, Folder 151 **DISPERSION OF GLASS**

Scope and Content Note

mimeographed experiment sheet for Physics 152, Autumn, 1935-36; with 5 copies

Box 11, Folder 152 **OLD EXPERIMENTS**

Scope and Content Note

for Physics 152 and 154, most for year 1935-36, some for 1941-42, all mimeographed or copied; and "Experiment IV. Wave-Length Measurement with the Michelson Interferometer" for Physics 152

Box 11, Folder 153 **PHYSICS 152, 1946. EXPERIMENTS I, 3, 4, 7, 8, AND 9**

Physical Description: copies, some with notations

Box 11, Folder 154 **PHYSICS 152, 153, and 154 EXPERIMENT SHEETS, 1947-48**

Physical Description: all mimeographed, many with handwritten notations.

Box 11, Folder 155 **MODERN PHYSICS LAB, AUTUMN, 1936-37**

Scope and Content Note

copies of all experiments; rough draft of article "An Apparatus for the Determination of the Gravitation Constant", Jan., 1936; personal correspondence with RCA Co. re: cathode ray tubes, 1937; data sheets etc.; reprint of article by Hansen and Lundstrom from *Proceedings of the I.R.E.* Vol. 33, No. 8, August, 1945, entitled: "Experimental Determination of Impedance Functions by the Use . . ."; much handwritten material; copy of patent by Harry Nyquist (Patent Office No. 1,915,440; issued in 1933)

Box 11, Folder 156 **AIR TRAFFIC CONTROL ANTENNA"**

Scope and Content Note

handwritten, appears to be Hansen's, possibly experiment notes, 21 pages

Box 11, Folder 157[E-3] **W.W. HANSEN, ELECTRICAL ENGINEERING DEPT., M.I.T. ON SPERRYGYRO, GARDEN CITY**

Scope and Content Note

handwritten notes, calculations, etc.

Box 11, Folder 158[E-6] **W.W. HANSEN, RADIATION LAB, U.C.**

Scope and Content Note

handwritten notes, calculations, 37 pages

Box 11, Folder 159 **NUCLEAR DISPERSION"**

Scope and Content Note

notebook and 2 loose sheets, handwritten notes, calculations, graphs, etc., title page dated Aug. 29, 1945

Box 11, Folder **LAB BOOK, NO TITLE**
160[I-11] **Physical Description:** handwritten, first 18 pages missing

Box 12, Folder **TRANSIENT RESPONSE OF WIDEBAND AMPLIFIERS**
161[E-2A,B,C] **Physical Description:** in three spiral notebooks

Box 12, Folder **KLYSTRONICS, M.I.T., 1941**
162[K-9B] **Physical Description:** handwritten

Box 12, Folder **W.W. HANSEN, ELECTRICAL ENGINEERING DEPT., M.I.T. or SPERRY GYRO, GARDEN CITY, [Book 1]; W.W. HANSEN, RADIATION LAB, M.I.T. or SPERRY GYRO [Books 2-6]**
163[P-15] **Physical Description:** handwritten

Box 12, Folder **A.A. COMPUTER, VOLS. II and III**
164[E4A,B] **Scope and Content Note**
handwritten, entitled: "Generalities Relative to Electronic Computers", also loose drawings and calculations

Box 13, Folder **NO TITLE -handwritten, some sheets dated 1936**
165[C-17]

Box 13, Folder **W.W. HANSEN, RADIATION LAB, M.I.T. or SPERRY GYRO, GARDEN CITY [Book 8]**
166[P-15] **Physical Description:** handwritten

Box 13, Folder **NO TITLE -three handwritten notebooks dated 1939**
167[K-10A,B,C]

Box 13, Folder **NO TITLE -handwritten notebook, undated**
168[E-7]

Box 13, Folder **NO TITLE -notebook dated 1939**
169[?K-10E]

Box 13, Folder **W.W. HANSEN, PHYSICS DEPT.**
170[M-5] **Scope and Content Note**
notebooks, graphs, data sheets (?) dated 1939

Box 13, Folder **NO TITLE -handwritten notebook**
171[I-12]

Box 13, Folder **W.W. HANSEN, PHYSICS DEPT. -handwritten notebook**
172[K-10D]

Box 14 **Microwave Lecture Notes, 1944**

Physical Description: 3 vols.

NOTEBOOK FOR PHYSICS 105/106 (1945-1948)

- Box 15, Folder 1 **Preliminary notes**
- Box 15, Folder 2 **Physics 106: experiment 3, Rydberg constant**
- Box 15, Folder 3 **Physics 105: experiment 13, Boltzmann's constant**
- Box 15, Folder 4 **Modern physics, fall 1946-47**
- Box 15, Folder 5 **Physics 105: oil drop experiment**
- Box 15, Folder 6 **Physics 106: e/m experiment**
- Box 15, Folder 7 **Physics 105/106: experiment 4 - gravitation constant**
- Box 15, Folder 8 **Physics 106: thermionic emission**
- Box 15, Folder 9 **Physics 106: velocity of light**
- Box 15, Folder 10 **Physics 106: cloud chamber**
- Box 15, Folder 11 **Miscellaneous notes and final exam**
- Box 15, Folder 12 **Modern Physics, 1946 -outlines**
- Box 15, Folder 13 **Spring 1948: syllabus, lab groups, and experiment/lecture notes**

NOTEBOOK (1940)

- Box 15, Folder 14 **Modern Physics**