

# James Duncan fonds

Revised by Erwin Wodarczak (1998)

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# Fonds Description

**James Duncanfonds.** – 1950-1984.

1.35 m of textual records.

## Biographical Sketch

Born in Adelaide, South Australia, James P. Duncan undertook graduate work in physics and engineering at the University of Adelaide (M.E., 1954) and the University of Manchester (D.Sc., 1964). Duncan became professor and head of the Department of Mechanical Engineering at the University of Sheffield in 1956. He came to the University of British Columbia in the same capacity in 1965 and retired in 1984.

## Scope and Content

Fonds consists of copies of numerous reports and papers that he authored or co-authored. These include reports, papers, and notes on the "Moiré Fringe" method of strain analysis, on which Duncan spent many years of research. Also included are graduate and undergraduate theses supervised by Duncan. Most of the materials are bound.

## Notes

File list available.

Title based on the contents of the fonds.

## Series Descriptions

**Collected Papers of J.P. Duncan.** - 1950-1984.

11 cm.

Series consists of papers written by James Duncan.

**Reports and Theses by J.P. Duncan as the Principal Author.** - 1953-1975.

53 cm.

Series consists of theses, reports, and published papers written by James Duncan either by himself or in collaboration with others.

**Reports Part-Authored or Supervised by J.P. Duncan.** - 1965-1982.

28 cm.

Series consists of theses, reports, and published papers co-authored or supervised by James Duncan.

**Reports on the Moiré Fringe.** - [195?-197?].

27 cm.

Series consists of reports and papers on the "Moiré Fringe" method of strain analysis, on which James Duncan spent many years of research.

**Seminar on Stress Analysis.** - January 1966.

6 cm.

Series consists of papers presented at a seminar organised by the Department of Mechanical Engineering, University of Sheffield, Jan. 5-7, 1966.

**Graduate Theses Supervised by J.P. Duncan.** - 1966-1967.

10 cm.

Series consists of copies of theses supervised by James Duncan.

# File List

## Box 1

### COLLECTED PAPERS OF J.P. DUNCAN (BOUND)

- 1-1 1950-1960 - Volume I
- 1-2 1961-1963
- 1-3 1964-1978
- 1-4 1979-1984

### REPORTS AND THESES BY J.P. DUNCAN AS THE PRINCIPAL AUTHOR (BOUND)

- 1-5 THE DESIGN OF TUBE-PLATES FOR HIGH PRESSURE FEED-WATER HEATERS by J.P. Duncan. (Adelaide) 1953
- 1-6,7 REPORTS ON DEVELOPMENTS IN FLAT LAPPING by J.P. Duncan. (Sheffield) Volumes 1, 2 1961
- 1-8 FLEXURAL RIGIDITY OF MULTIPLY CONNECTED PLATES (Volume I) by J.P. Duncan. (Sheffield) 1961
- 1-9 FLEXURAL RIGIDITY OF MULTIPLY CONNECTED PLATES (Volume II) - EXPERIMENTAL TECHNIQUES by J.P. Duncan. 1961
- 1-10 FLEXURAL RIGIDITY OF MULTIPLY CONNECTED PLATES (Volume III) - QUANTITATIVE STUDIES by J.P. Duncan & O. Michejda. 1960
- 1-11 FLEXURAL RIGIDITY OF MULTIPLY CONNECTED PLATES (Volume IV) - APPENDICES I - VIII by J.P. Duncan. [1961?]

## Box 2

- 2-1 FLEXURAL RIGIDITY OF MULTIPLY CONNECTED PLATES (Volume V) - APPENDICES IX - X by J.P. Duncan. [1961?]

- 2-2 SURFACE TOPOGRAPHY.- A short Course of Lectures on The Design, forming and assessment of physical surfaces as encountered in engineering construction. by J.P. Duncan. (Pennsylvania State University) 1965
- 2-3 THE OPTICAL SURVEY OF CURVED SURFACES by J.P. Duncan. (U.B.C.) 1966
- 2-4 CONTINUOUS PATH MACHINING ON A POINT-TO-POINT MACHINE (Vol. I) by J.P. Duncan, P.L. Ko and S.Y. Hui. (U.B.C.) 1969
- 2-5 TOPOGRAPHICAL SURVEY OF CURVED AERODYNAMIC SURFACES by J.P. Duncan. (U.B.C.) 1970
- 2-6 ELEMENTARY OPTICAL THEORY UNDERLYING HOLOGRAPHY by J.P. Duncan. (U.B.C.) 1971
- 2-7 POLYHEDRAL N/C PROGRAM DOCUMENTATION by J.P. Duncan & S.G. Mair. (U.B.C.) 1975
- 2-8 BASIC OPTICS FOR ENGINEERS (Volume 1) by J.P. Duncan & E.W. Johnson. [n.d.]
- 2-9 N/C MACHINING OF COMPLEX SURFACES (Vol. 2) by J.P. Duncan [n.d.]
- 2-10 SUBSTRATES FOR ASTRONOMICAL TELESCOPES - Review Paper Self-Weight Loaded Structures in the Context of Lightweight Mirror Applications. by J.P. Duncan. [n.d.]

Box 3

REPORTS PART-AUTHORED OR SUPERVISED BY J.P. DUNCAN (BOUND)

- 3-1 SURFACE IN ENGINEERING APPLICATIONS by J.P. Duncan. 1965
- 3-2 THE DESIGN AND MANUFACTURE OF LARGE STEAM TURBINE BLADES by J.P. Duncan. 1966
- 3-3 INTERFEROMETERS FOR METROLOGY AND EXPERIMENTAL STRESS ANALYSIS by J.P. Duncan. 1967

- 3-4 TOPOGRAPHICAL SURVEY OF CURVED AERODYNAMIC SURFACES by J.P. Duncan. (U.B.C.) 1967
- 3-5 TOPOGRAPHICAL SURVEY OF CURVED AERODYNAMIC SURFACES by J.P. Duncan. (U.B.C.) 1968
- 3-6 ELEMENTARY REVIEW OF PHOTOELASTICITY by J.P. Duncan. 1968
- 3-7 STUDIES OF GAIT - To discover the relative motion of the pelvis and femur with a disparity of leg length by J.P. Duncan. 1968
- 3-8 CONTINUOUS PATH MACHINING ON A POINT TO POINT MACHINE by J.P. Duncan., P.L. Ko and S.Y. Hui. (U.B.C.) 1969
- 3-9 APPLIED OPTICS by J.P. Duncan. (Monash Univ. Australia) 1970
- 3-10 EQUIVALENT TRANSVERSE SHEAR MODULUS FOR PERFORATED PLATE by T.V. Santosham & J.P. Duncan. 1970
- 3-11 A MOULD MACHINED BY NUMERICAL CONTROL on a 2-1/2 AXIS OPEN LOOP MACHINE with ROTARY TABLE AND AXIS INTERCHANGE SWITCHING by J.P. Duncan. (U.B.C.) 1970
- 3-12 NUMERICALLY CONTROLLED MACHINING by J.P. Duncan. (Monash Univ. Australia) 1970
- 3-13 QUASI CONTINUOUS PATH MACHINING OF SURFACES by J.P. Duncan, P.O. Ko and S.Y. Hui. 1970
- 3-14 Short Note on NEGATIVE PEDAL NUMERICALLY CONTROLLED MACHINING by J.P. Duncan. (U.B.C.) 1970
- 3-15 ELEMENTARY OPTICAL THEORY UNDERLYING HOLOGRAPHY by J.P. Duncan. 1971
- 3-16 POTENTIAL OF LOW COST N/C IN MARINE ENGINEERING - Presentation to Inst. of Marine Engineers, Vancouver. by J.P. Duncan. 1973

- 3-17 THREE DIMENSIONAL SHAPE-SENSING AND REPRODUCTION OF LIMBS AND LIMB REMNANTS by J.P. Duncan, F.P. Patterson and J. Foort. - Interim Report on Exploratory Work Achieved. 1973
- 3-18 THREE-DIMENSIONAL SHAPE-SENSING AND REPRODUCTION OF LIMBS AND LIMB REMNANTS - Report of a Conference sponsored by The Dept. of Mech. Eng. and the Division of Orthopaedics, U.B.C. in cooperation with the National Research Council., Washington, D.C. 1973
- 3-19 THE N/C MACHINING OF DIE BLENDS WITH BOUNDARY DEFINITION by J.P. Duncan, S.G. Mair. (U.B.C.) 1974
- 3-20 POTENTIAL OF LOW COST NUMERICALLY CONTROLLED MACHINING IN PATTERN MAKING & CASTING by J.P. Duncan. 1974
- 3-21 PROGRAM PARTADJ (Partial Surface Adjustments) by J.P. Duncan, V.T.Y. Lee and G.W. Vickers. 1976
- 3-22 POLYHEDRAL NC - A Computer-aided System for Machining Designed & Natural Sculptured Surfaces by J.P. Duncan & Colleagues. (U.B.C.) 1977
- 3-23 SHOE LAST DUPLICATION BY AUTOMATED MEANS by G.W. Vickers, J. Foort, S. Saunders, S. Cousins, A. Steeves, J.P. Duncan. 1980
- 3-24 THE MACHINING OF PIECEWISE ANALYTICAL SURFACES ON A FANUC MILLING MACHINE by J.P. Duncan. (Univ. of Canterbury, N.Z.) 1982
- 3-25 MY INVOLVEMENT WITH STEAM by J.P. Duncan. [n.d.]
- 3-26 N/C MACHINING OF COMPLEX AND NON ANALYTICAL SURFACES ON POINT-TO-POINT AND HYBRID CONTINUOUS PATH MACHINES by J.P. Duncan (U.B.C.). [n.d.]
- 3-27 N/C MACHINING OF COMPLEX AND NON ANALYTICAL SURFACES ON POINT-TO-POINT AND HYBRID CONTINUOUS PATH MACHINES – APPENDICES by J.P. Duncan. [n.d.]
- 3-28 AN OPTIMAL CONCEPT FOR THE SUPPORT OF LIGHTWEIGHT MIRROR SUBSTRATE by J.P. Duncan. [n.d.]



- 3-29 THE REPLICATION OF LIMBS AND ANATOMICAL SURFACES by J.P. Duncan, James Foort & S.G. Mair. [n.d.]
- 3-30 SELF-WEIGHT LOADED STRUCTURES IN THE CONTEXT OF LIGHTWEIGHT MIRROR APPLICATIONS by J.P. Duncan. [n.d.]
- 3-31 A SYSTEM FOR DIE DESIGN AND DIE SINKING BASED ON DIGITAL COMPUTING AND PLOTTING by J.P. Duncan, H. Vaughan and S.G. Mair (U.B.C.). [n.d.]

#### REPORTS ON THE MOIRE FRINGE (UNBOUND)

- 3-32 MANUAL ON THE MOIRE METHOD OF STRAIN ANALYSIS by J.P. Duncan, D. Post, E. Middleton & C.A. Sciammarella (University of British Columbia) [n.d.] [2 folders]
- 3-33 PAPERS ON MOIRE by J.P. Duncan and other authors [n.d.]
- 3-34, 35 Publications on the Moire Fringe - collected by J.P. Duncan [n.d.]

#### Box 4

- 4-1/7 Publications on the Moire Fringe - collected by J.P. Duncan [n.d.]

#### SEMINAR ON STRESS ANALYSIS (BOUND)

- 4-8 RECENT DEVELOPMENTS IN THE TECHNIQUES OF EXPERIMENTAL STRESS ANALYSIS - Seminar organised by the Dept. of Mech. Engineering, University of Sheffield, Jan. 5-7, 1966.

#### GRADUATE THESES SUPERVISED BY J.P. DUNCAN (BOUND)

- 4-9 AN ASSESSMENT OF METHODS OF THREE DIMENSIONAL NUMERICAL AND EXPERIMENTAL STRESS ANALYSIS by B. Kenny and J.P. Duncan. 1966

- 4-10 STRESS ANALYSIS OF PERFORATED PLATES by H. Tawfiq (Sheffield).  
1966 [bound together with 4-9]
- 4-11 INTERFEROMETERS FOR METROLOGY AND EXPERIMENTAL STRESS  
ANALYSIS by J.P. Duncan and Vijay Kumar Bajaj (U.B.C.). 1967
- 4-12 OPTICAL TECHNIQUES FOR STUDY OF FLEXURE by J.P. Duncan & P.G.  
Sabin. [n.d.]