



Catalogue of the papers of

**David Charles Wicks**

(1931-2000)

by Lizzie Richmond  
University of Bath Archives

Title:	Catalogue of the papers and correspondence of David Charles Wicks (1931-2001), mathematician
Compiled by:	Lizzie Richmond
Description level:	Fonds
Date of material:	1958-1990
Extent of material:	7 boxes, ca 186 items
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**LIST OF CONTENTS**

	Items	Page
GENERAL INTRODUCTION		4
SECTION A BIOGRAPHICAL	A.1-A.3	6
SECTION B RESEARCH	B.1-B.52	7
SECTION C LECTURES	C.1-C.127	12
SECTION D CONFERENCE ON NUMERICAL METHODS FOR FLUID DYNAMICS	D.1-D.4	26

## GENERAL INTRODUCTION

### PROVENANCE

The papers were received in April 2001 and February 2002 from Mrs E. H. Wicks, the widow of Mr Wicks.

### OUTLINE OF THE CAREER OF DAVID CHARLES WICKS

David Charles Wicks was born in Essex on 28th November 1931. During World War II he was evacuated first to Ipswich, Suffolk and then to Urchfont, Wiltshire. In 1942 he returned home and attended Bancrofts School, Woodford Green. He won an Essex County Major Scholarship to attend Queen Mary College, London where he obtained a first class BSc in mathematics. From 1953 to 1955 Wicks undertook postgraduate studies in hydrodynamics, elasticity and aerodynamics and gained a MSc by examination with distinction.

After his graduation Wicks took up the post of technical engineer in the Mathematical Services Group of Bristol Aircraft Ltd. He worked as a programmer for the electronic digital computer DEUCE and gained practical experience of numerical methods and early computing techniques in the field of aircraft and missile engineering. In September 1957 Wicks was engaged as a part-time lecturer in practical mathematics to teach first year higher national certificate students at Bristol College of Technology. From September 1958 Wicks was employed by the College as a full-time assistant lecturer and in the following year he became a lecturer in mathematics. In 1972 Wicks was awarded an MPhil by Queen Mary College, London.

Wicks remained at Bristol College of Technology, which became the University of Bath in 1967, until his retirement in August 1990. As one of the University's longest-serving academics Wicks was involved in the teaching of both undergraduates and postgraduates. Although fluid dynamics remained his main area of interest his lecturing duties were wide-ranging and he regularly delivered mathematics lectures to students in the departments of Mechanical Engineering, Chemical Engineering and Materials Science as well as to those in his own department. During his years at Bath Wicks' research projects included collaborative work with his University of Bath colleague, R. J. Bedding.

Wicks' interest in learning extended beyond the University of Bath. He was chair of the governors of his local village school in Norton St Philip, Somerset and during his term as a county councillor, between 1989 and 1997, he chaired the education committee. From 1997 to early 2000 Wicks served as constituency chairman of the Liberal Democrats.

Wicks was married in 1957 and had three children.

### DESCRIPTION OF THE COLLECTION

The material is presented in the order given in the contents list. It covers the period from 1958 to 1990.

Section A, Biographical, contains a very small amount of material relating to various aspects of Wicks' career. It includes correspondence and papers concerning Wicks' first full-time appointment at Bristol College of Technology.

Section B, Research, comprises two notebooks and the contents of several folders documenting Wicks' study and research interests.

Section C, Lectures, forms the main body of the collection. It is composed of the notes used by Wicks in lectures given to Bristol College of Technology and University of Bath undergraduate students. The notes cover a broad range of topics including fluid dynamics, differential equations and vector analysis.

Section D, Conference on Numerical Methods for Fluid Dynamics, contains a very small amount of material, including Wicks' notes, relating to a conference on fluid dynamics held in Oxford in 1988.

### ACKNOWLEDGEMENTS

We are very grateful to Mrs E. H. Wicks for her assistance in making this material available.

L. Richmond  
Bath 2002

SECTION A	BIOGRAPHICAL	A.1-A.3	SECTION B	RESEARCH	B.1-B.52
	A.1	OBITUARY		B.1, B.2	NOTEBOOKS
	A.2, A.3	CAREER		B.3	THESIS
A.1	<b>OBITUARY</b>	<b>2000</b>		B.3-B.33	'FIRE RESEARCH'
A.1	<i>The Bath Chronicle</i> , 28 November 2000.			B.34-B.52	RESEARCH NOTES AND PAPERS
A.2, A.3	<b>CAREER</b>	<b>1958</b>	<b>B.1, B.2</b>	<b>NOTEBOOKS</b>	<b>?mid 1950s</b>
A.2	Copy of Bristol College of Technology application form, 1958.			The notebooks in this sub-section are undated. They appear to have been used by Wicks during his time as an undergraduate and postgraduate at Queen Mary College, London and are therefore presented in this section along with papers relating to Wicks' later research. It is possible however that the notebooks were used for early lecture notes.	
A.3	Copies of letters of reference, 1958			See also C.1-C.127.	
			B.1	Hardback notebook inscribed on the front cover 'Group Theory' containing notes entitled 'Theory of Groups', nd, ?mid-1950s.  See also B.2.	
			B.2	Hardback notebook inscribed on the front cover 'Groups II' used from the front for notes entitled 'Theorem' and from the back for notes entitled 'Summary', nd, ?mid 1950s.  See also B.1.	

<b>B.3</b>	<b>THESIS</b>	<b>1972</b>
	MPhil thesis (bound) entitled 'The Viscous and Thermal Boundary Layers on a General Rotating Body of Revolution', D. C. Wicks, [Queen Mary College, London], 1972.	
<b>B.4-B.33</b>	<b>'FIRE RESEARCH'</b>	<b>1985-1990</b>
	The material in this sub-section represents the contents of a large folder inscribed on the front cover 'Fire Research'.	
	The presentation is chronological. Undated material has been placed at the end of the sequence. Where the individual pages of a group of notes are dated differently a date span is given.	
B.4	26pp manuscript notes entitled 'Application of the Implicit Fractured Scheme to the Fire Problem', May-July 1985.	
B.5	6pp manuscript notes entitled 'B & W - Notation', July-August 1985, June 1989.	
B.6	34pp typescript entitled 'For Ministry of Defence Contract: Thermal Study NRE 13B/89673' by D. C. Wicks and R. J. Bedding, 21 April 1986.	
B.7-B.13	'Side Vent Version, May 1986'. Contents of folder so inscribed divided into seven for ease of reference.	
B. 7	2pp manuscript notes entitled 'Side Vent Version', 23 May 1986.	
B.8-B.13	Computer data printout entitled 'Results of Fire Program'. Six folders.	
B.14	7pp manuscript notes entitled 'Pressure Equation Method', August 1987.	

B.15	13pp manuscript notes entitled 'New Energy Equation Formulation', June 1988-July 1989.
B.16	9pp manuscript notes entitled 'Run Record and Checking', 26 August 1988.
B.17	5pp manuscript notes entitled 'Energy Equation Method - New Notation', August 1988, August 1990.
B.18	Various manuscript notes, 1988.
B.19	7pp untitled manuscript notes, June 1989.
B.20	14pp manuscript notes entitled 'Modified Vent Calculation', 5 July 1989.
B.21	2pp manuscript notes entitled 'Time Plot Variable Specification', 11 July 1989.
B.22	10pp manuscript notes entitled 'Testing Version 2', July 1989.
B.23	Various manuscript notes, 1989.
B.24	5pp manuscript notes entitled 'Modification Required to Allow Values $\sigma \neq 1$ ', May-August 1990.
B.25	7pp manuscript notes entitled 'Testing Latest Methods', July 1990.
B.26	12pp manuscript notes entitled 'Testing Modes to Version 1 to Provide $\sigma \neq 1$ ', July-August 1990.
B.27	Various manuscript notes, 1990.

- B.28 Computer data printout, ca 1990.
- B.29 2pp manuscript notes entitled 'I/O Conventions', nd.
- B.30 4pp manuscript notes entitled 'Suggested Node Addresses for New Hop-Scotch Scheme', nd.
- B.31 Various manuscript notes, nd.
- B.32, B.33 Background material.  
Two folders.
- B.34-B.52 RESEARCH NOTES AND PAPERS 1968-1983**
- B.34-B.36 'Diffuser Papers.' Contents of folder so inscribed divided into three for ease of reference.
- B.34 Variously paginated notes, 1968-ca 1981.
- B.35, B.36 Background material.  
Two folders.
- B.37 'Diffuser Plots'. Contents of folder so inscribed.  
Computer printout graphs, 1978-1979.
- B.38-B.42 'Turbo Machinery Research - General File I'. Contents of folder so inscribed divided into five for ease of reference.  
Variously paginated manuscript notes, 1974-1982.

- B.43-B.47 'Research - General File II'. Contents of folder so inscribed divided into five for ease of reference.  
Variously paginated manuscript notes, 1978-1979.
- B.48-B.52 'Research - General File III'. Contents of folder so inscribed divided into five for ease of reference.  
Variously paginated manuscript notes and computer data printout, 1982-1983.

**SECTION C                      LECTURES    C.1-C.127**

This section contains material relating to lectures delivered by Wicks to students at Bristol College of Technology and the University of Bath. Most of the notes are undated but appear to have been composed and used throughout his long teaching career. They cover a broad range of subjects including differential equations, fluid dynamics and vector analysis. Wicks' involvement in the teaching of mathematics to students in the departments of Mechanical Engineering, Chemical Engineering and Materials Science is also reflected in the lecture notes in this section.

- C.1-C.121      LECTURE NOTES
- C.122-C127      TRANSPARENCIES

**C.1-C.121                      LECTURE NOTES    1968-1990, nd**

Some of the lecture notes in this sub-section are accompanied by transparencies used by Wicks in the delivery of his lectures. A separate sequence of transparencies can also be found at C.122-C.127.

The original arrangement of the notes, found in a number of labelled folders has been preserved. The presentation is alphabetical according to the topic or subject area indicated by folder labels.

- C.1-C.6                      'A.1.' Contents of folder so inscribed divided into six for ease of reference.  
137pp manuscript notes entitled 'Lectures for A.1', nd.
- C.7, C.8                      'Applied Maths.' Contents of folder so inscribed divided into two for ease of reference.  
97pp manuscript notes entitled 'Applied Maths FTII - Dynamics', nd.
- C.9-C.14                      'Applied Methods: P4.' Contents of folder so inscribed divided into six for ease of reference.
- C.9-C.11                      74pp manuscript notes entitled 'P4 Applied Methods', nd.  
Three folders.
- C.12                              31pp manuscript notes entitled 'B3 Mathematical Methods', nd.
- C.13                              23pp manuscript notes entitled 'Difference Equations', nd.  
See also C.28.
- C.14                              Various typescript exercise questions entitled 'P4 Problems' with manuscript solutions, 1989.

- C.15-C.17 'Basic Calculus and New Functions.' Contents of folder so inscribed divided into three for ease of reference.
- C.15 14pp typescript and manuscript notes entitled 'Calculus and Standard Functions', nd.
- C.16 15pp manuscript notes entitled 'Exponential Functions', nd.
- C.17 1p typescript exercise questions entitled 'T1 Mathematics: Calculus and Standard Functions', October 1989.
- C.18-C.22 'Cartesian Tensors (Mat. Sci.)' Contents of folder so inscribed divided into five for ease of reference.  
See also C.56, C.61.
- C.18 29pp manuscript notes entitled 'Cartesian Tensors', nd.
- C.19 21pp manuscript notes entitled 'The Strain Tensor', nd.
- C.20 3pp manuscript notes entitled 'Transformation of Stress-Strain Equation', nd.
- C.21 1p manuscript exercise questions entitled 'Cartesian Tensors I', November 1981.
- C.22 1p manuscript exercise questions entitled 'Cartesian Tensors II', November 1982.
- C.23-C.30 'Chemical Engineering 2 - Dave's Notes.' Contents of folder so inscribed divided into eight for ease of reference.
- C.23 7pp typescript entitled 'B.Eng Honours Degree Course in Chemical and Bio Process Engineering - Second Year', nd.

- C.24 7pp typescript entitled 'B.Eng Honours Degree Course in Chemical and Bio Process Engineering - Final Year', nd.
- C.25 Various Typescript exercise questions entitled 'CE2 Mathematics' with manuscript solutions, 1988, 1989.
- C.26 32pp manuscript notes entitled 'Linear Algebra', nd.
- C.27 32pp manuscript notes entitled 'Boundary Value Problems', nd.
- C.28 21pp manuscript notes entitled 'Difference Equations', nd.  
See also C.13.
- C.29 16pp manuscript notes entitled 'Numerical Solution of Differential Equations', nd.
- C.30 Variously paginated typescript notes *re* linear differential equations, nd.
- C.31-C.36 'Chemical Engineering 3 - Vectors and Hydro.' Contents of folder so inscribed divided into six for ease of reference.  
See also C.109-C.113.
- C.31 18pp manuscript notes entitled 'Vectors and Fluid Dynamics' with 1p typescript course outline entitled 'Chemical Engineering - Final Year Mathematics', October 1984.
- C.32 24pp manuscript notes entitled 'Equations of Flow of a Non-Viscous Fluid', nd.
- C.33 56pp manuscript notes entitled 'Two-Dimensional Flow', nd.



- C.34 4 presentation transparencies entitled 'Continuity Equation in Polar Coordinates', nd.
- C.35 1p typescript exercise questions entitled 'Two-Dimensional Flow' and 4pp manuscript solutions, October 1983.
- C.36 1p typescript exercise questions (annotated) entitled 'Vectors and Equations of Flow', October 1985.
- C.37-C.40 'Complex Numbers.' Contents of folder so inscribed divided into four for ease of reference.
- C.37 9pp manuscript notes entitled 'Complex Numbers', nd.
- C.38 17pp manuscript notes entitled 'Complex Numbers', nd.
- C.39 3pp manuscript notes entitled 'Roots of a Complex Number', nd.
- C.40 1p typescript exercise questions entitled 'T1 Mathematics: Complex Numbers', October 1989.
- C.41-C.49 'Differential Equations.' Contents of folder so inscribed divided into nine for ease of reference.
- C.41 12pp manuscript notes entitled 'Non-homogeneous Linear Differential Equations', nd.
- C.42 1p typescript exercise questions entitled 'T2 Mathematics: Non-homogeneous Linear Differential Equations', January 1989.
- C.43 1p typescript exercise questions entitled 'T2 Mathematics: Homogeneous Linear Differential Equations', January 1989.

- C.44 4pp typescript notes entitled 'First Order Differential Equations', nd.
- C.45 1p typescript exercise questions entitled 'T2 Mathematics: First Order Differential Equations', January 1989.
- C.46 16pp manuscript notes entitled 'Second Order Linear Differential Equations', nd.
- C.47 17pp manuscript notes entitled 'Ordering Differential Equations' nd.
- C.48 6pp typescript notes entitled 'Vibrations', nd.
- C.49 16 presentation transparencies entitled 'Vibrations', nd.
- C.50, C.51 'Electricity and Magnetism.' Contents of folder so inscribed divided into two for ease of reference.
- C.50 43pp manuscript notes entitled 'Electricity and Magnetism', nd.
- C.51 2pp manuscript exercise questions entitled 'Electricity and Magnetism', nd.
- C.52-C.55 'Engineering T5.' Contents of folder so inscribed divided into four for ease of reference.
- C.52 Various typescript exercise questions entitled 'T5 Mathematics' with typescript and manuscript solutions, 1987.
- C.53 29pp manuscript notes entitled 'T5 Numerical Analysis', nd.
- C.54 11pp manuscript notes entitled 'Notes on Numerical Techniques', nd.

- C.55 2pp manuscript notes entitled 'How Computer Solution Times are Affected by the Nature of the Eigen Values of a System', nd.
- C.56-C.61 'Fluid Dynamics (Advanced).' Content so of folder so inscribed divided into six for ease of reference.
- C.56 17pp manuscript notes entitled 'Cartesian Tensors', January 1975.  
See also C.18-C.22, C.61.
- C.57 31pp manuscript notes entitled 'The Equations of Viscous Flow', February 1975.
- C.58 10pp manuscript notes entitled 'Boundary Layer Theory', nd.
- C.59 9pp manuscript notes entitled 'Elements of Thermodynamics', March 1971.
- C.60 33pp manuscript notes entitled 'Gas Dynamics', nd.
- C.61 6pp manuscript notes entitled 'Cartesian Tensors', January 1975.  
See also C.18-C.22, C.56.
- C.62-C.64 'Fourier Series.' Contents of series so inscribed divided into three for ease of reference.  
See also C.126.
- C.62 49pp manuscript notes entitled 'Fourier Series', nd.
- C.63 10pp manuscript exercise questions entitled 'Fourier Series', 1975, 1976.
- C.64 13pp manuscript notes entitled 'Some Notes on Fourier Series (Notes for OU Student)', nd.

- C.65-C.71 'FORTRAN.' Contents of folder so inscribed divided into seven for ease of reference.
- C.65-C.67 51pp manuscript notes entitled 'FORTRAN', nd.  
Three folders.
- C.68 49pp typescript entitled 'FORTRAN: An Introductory Manual', University of Bath, School of Mathematics, 1982.
- C.69 Various manuscript and typescript exercise questions entitled 'FORTRAN I-III', 1983, 1984.
- C.70 12pp typescript entitled 'Running FORTRAN Programs on GEC UNIX', January 1985.
- C.71 11pp typescript entitled 'Introduction to the Numerical Solution of Differential Equations Using FORTRAN' by D. C. Wicks, 1985.
- C.72-C.75 'Integration.' Contents of folder so inscribed divided into four for ease of reference.
- C.72 7pp manuscript notes entitled 'Integration Methods', nd.
- C.73 16pp manuscript notes entitled 'Other Methods', nd.
- C.74 16pp typescript notes entitled 'Methods of Integration', nd.
- C.75 1p typescript exercise questions entitled 'T1 Mathematics: Integration', November 1989.

- C.76-C.83 'Laplace Transforms.' Contents of folder so inscribed divided into eight for ease of reference.  
See also C.124.
- C.76 3pp manuscript notes entitled 'Laplace Transforms', nd.
- C.77 8pp manuscript notes entitled 'Important Properties and Standard Transforms', nd.
- C.78 4pp manuscript notes entitled 'Linear Differential Equations with Constant Coefficient', nd.
- C.79 33pp manuscript notes entitled 'Step and Ramp Responses', nd.
- C.80 8pp manuscript notes entitled 'Impulse Response', nd.
- C.81 2pp typescript notes entitled 'The Dirac Delta Function', March 1987.
- C.82 1p typescript exercise questions entitled 'T2 Mathematics: Laplace Transforms I' with 4pp manuscript solutions, February 1987.
- C.83 1p typescript exercise questions entitled 'T2 Mathematics: Laplace Transforms II' with 2pp manuscript solutions, February 1987.
- C.84-C.88 'Matrices (1976).' Contents of folder so inscribed divided into five for ease of reference.  
See also C.89, C.90, C.123.
- C.84 21pp manuscript notes entitled 'Linear Algebra', nd.
- C.85 13pp manuscript notes entitled 'Determinants', nd.

- C.86 17pp manuscript notes entitled 'Linear Algebraic Equations and Matrix Inverse', nd.
- C.87 1p manuscript exercise questions entitled 'Linear Algebra IV: Eigen Values with 6pp manuscript solutions, February 1985.
- C.88 2pp typescript exercise questions entitled 'Matrices I' and 'Matrices II', nd.
- C.89, C.90 'Matrices (H).' Contents of folder so inscribed divided into two for ease of reference.  
See also C.84-C.88, C.123.
- C.89 53pp manuscript notes entitled 'Matrices', 1968, 1969.
- C.90 4pp manuscript exercise questions entitled 'DMSI Matrices - Problem Sheets I-IV', October 1968.
- C.91-C.94 'Numerical Methods.' Contents of folder so inscribed divided into four for ease of reference.  
See also C.125.
- C.91 33pp manuscript and typescript notes entitled 'Introduction to Numerical Methods', nd.
- C.92 1p typescript exercise questions entitled 'Truncation Error in the Trapezoidal Rule', November 1986.
- C.93 1p typescript exercise questions entitled 'T1 Mathematics: Numerical Methods I', November 1988.
- C.94 1p typescript exercise questions entitled 'T2 Mathematics: Numerical Methods (cont.)', January 1989.

- C.95-C.101 'PDEs.' Contents of folder so inscribed divided into seven for ease of reference.
- C.95 8pp manuscript notes entitled 'Partial Differential Equations', nd.
- C.96 5pp manuscript notes entitled 'The Method of Separation of Variables', nd.
- C.97 12pp manuscript notes entitled 'Use of Fourier Series in Solution of PDEs', nd.
- C.98 11pp manuscript notes entitled 'Eigenvalue Problems', nd.
- C.99 6pp manuscript notes entitled 'Related Mathematical Methods - Not For Class Use', nd.
- C.100 7pp manuscript notes entitled 'Revision of Fourier Series', nd.
- C.101 1p typescript exercise questions entitled 'MS2 Mathematics: Partial Differential Equations' with 6pp manuscript solutions, February 1990.
- C.102-C.104 'Series.' Contents of folder so inscribed divided into three for ease of reference.
- C.102 17pp manuscript and typescript notes entitled 'Infinite Series', September 1986.
- C.103 4pp manuscript notes entitled 'Series Expansion', nd.
- C.104 1p typescript exercise questions entitled 'T1 Mathematics: Series Expansion', November 1989.

- C.105-C.108 'Statistics.' Contents of folder so inscribed divided into four for ease of reference.
- C.105, C.106 64pp manuscript notes entitled 'Statistics', nd ca 1982.  
Two folders.
- C.107 23pp manuscript notes entitled 'Sampling Theory', nd.
- C.108 Various untitled manuscript notes and graphs, nd.
- C.109-C.113 'Vector Analysis and Hydrodynamics.' Contents of folder so inscribed divided into five for ease of reference.  
See also C.31-C.36.
- C.109 7pp manuscript and typescript notes *re* the content and assessment of the C7 Vector Analysis and Hydrodynamics Course, 1971, 1972.
- C.110 28pp manuscript notes entitled 'Vector Analysis', nd.
- C.111 34pp manuscript notes entitled 'Hydrodynamics', nd.
- C.112 2pp manuscript exercise questions entitled 'Vector Analysis Problem Sheet I' and 'Vector Analysis Problem Sheet II', October 1968.
- C.113 3pp manuscript exercise questions entitled 'Fluid Dynamics: Problem Sheets I-III', November 1970-January 1971.
- C.114-C.118 'Vectors.' Contents of folder so inscribed divided into five for ease of reference.
- C.114 25pp manuscript notes entitled 'Vectors', nd.

- C.115 5pp manuscript notes entitled 'Vectors', nd.
- C.116 23pp manuscript notes entitled 'Vector Calculus', nd.
- C.117 1p manuscript exercise questions entitled 'Vectors I' with 1p manuscript solutions, February 1981.
- C.118 1p manuscript exercise questions entitled 'Vectors II' with 2pp manuscript solutions, March 1981.
- C.119-C.121 'Vectors and Dynamics.' Contents of folder so inscribed divided into three for ease of reference.  
  
63pp manuscript notes entitled 'Vectors and Dynamics (Ref. S. L. Green).', nd.

**C.122-C.127 TRANSPARENCIES 1987, nd**

The presentation is alphabetical by title or topic.

- C.122 7 transparencies entitled 'Elementary Transformations', nd.
- C.123 7 transparencies entitled 'Introduction to Matrix Algebra', nd.  
See also C.84-C.90.
- C.124 5 transparencies *re* Laplace transforms, March 1987.  
See also C.76-C.83.
- C.125 4 transparencies *re* numerical methods, nd.  
See also C.91-C.94.

- C.126 1 transparency entitled 'Partial Sums of Fourier Series', nd.  
See also C.62-C.64.
- C.127 11 transparencies *re* tridiagonal systems and Gaussian elimination, nd.

