

Catalogue of the papers and correspondence of

**Henry Ellis Daniels FRS**

(1912-2000)

by Peter Harper and Timothy E. Powell  
NCUACS catalogue no. 109/8/02

Title: Catalogue of the papers and correspondence of Henry Ellis Daniels FRS (1912-2000), statistician

Compiled by: Peter Harper and Timothy E. Powell

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## GENERAL INTRODUCTION

### PROVENANCE

The papers were received from Mrs Barbara Daniels, widow, in June 2001

### OUTLINE OF THE CAREER OF HENRY ELLIS DANIELS

Daniels was born in London on 2 October 1912. He was educated at the Sciennes School, Edinburgh and George Heriot's School, Edinburgh, obtaining a scholarship to read mathematics at Edinburgh University where he graduated MA in 1933. With the encouragement of the head of department, E.T. Whittaker, he went for a further period of study at Cambridge University, winning a Major Mathematical Scholarship to Clare College. Amongst his Cambridge studies he took a course in statistics with practical exercises which was provided by the School of Agriculture. In 1935 he was appointed Statistician at the Wool Research Industries Association, Leeds to study mathematical and statistical aspects of the wool industries. Skeins of wool are bundles of fibres and the mathematical theory of 'fibre bundles' was one that Daniels returned to again and again in his career. One of Daniels' colleagues at Leeds was the biochemist A.J.P. Martin who, with R.L.M. Synge, was working on the development of paper chromatography for which they were awarded a Nobel Prize. Daniels contributed a mathematical appendix to their key paper giving a quantitative explanation of why the method works.

During the Second World War Daniels was seconded to the Air Warfare Analysis Group in the Ministry of Aircraft Production to work on improvements in radiolocation. This work led in due course to a major paper on position finding in the *Journal of the Royal Statistical Society*. In 1947 he returned to Cambridge as Lecturer in Mathematics attached to the newly formed Statistical Laboratory which offered a postgraduate Diploma in Statistics. Here he played a crucial role in the formation of the Laboratory's many impressive students but became very critical of the University's treatment of his subject, there being no professor and none of the academic staff held college fellowships. In 1957 Birmingham University established a Chair in Mathematical Statistics and Daniels was invited to apply. Here he spent 21 years, retiring from the Chair in 1978 when he returned to Cambridge to continue research in association with the Statistical Laboratory. Amongst his statistical work at Birmingham was a close research relationship with J.C. Squire, a leading member of the medical faculty. Daniels' research was characterised by his deployment of classical mathematical techniques to solve very difficult probabilistic problems arising from scientific issues.

Daniels' distinction in mathematical statistics was recognised by his colleagues and the wider scientific community. In 1974-1975 he served as President of the Royal Statistical Society which awarded him its Guy Medal in silver in 1957 and in gold in 1984. In 1985 he was elected an honorary fellow of the International Statistical Institute. He was elected FRS in 1980.

Outside his professional activities Daniels had considerable musical interests and abilities which included playing the concertina. He was also a highly skilled watch repairer and assisted the watchmaker George Daniels design a watch which showed sidereal as well as solar time to a high degree of accuracy. Henry Daniels became first a Freeman and then in 1984 a Liveryman of the Worshipful Company of Clockmakers.

In 1950 he married Barbara Edith Pickering with whom he had two children. He died 16 April 2000.

#### DESCRIPTION OF THE COLLECTION

The material in the collection is presented in the order shown in the List of Contents. It covers the period *ca* 1931-2000.

Section A, Notebooks, provides important documentation of Daniels' mathematical studies at Edinburgh and Cambridge. There are thirteen notebooks which appear to have been used by Daniels at Edinburgh for lecture notes. Members of the academic staff of the university represented by lecture notes include the head of department, E.T. Whittaker, C.G. Darwin, Tait Professor of Natural Philosophy, W.H. McCrea and A. Oppenheimer. As many as twenty notebooks appear to have been used at Cambridge. Members of the academic staff represented by lecture notes include A.S. Eddington, Plumian Professor of Astronomy and mathematics lecturers A.E. Ingham, M.H.A. Newman and A.H. Wilson. Agricultural statistics are represented by notes of H.G. Sanders' lectures on field experimentation with practical examples. There are a small number of caricature sketches (heads in profile) of Daniels' lecturers in the student notebooks and Eddington is one of those represented in this way. A further six notebooks do not appear to be student notebooks; two are dated in 1950 when Daniels was a mathematics lecturer at Cambridge.

Section B, Research, presents an alphabetical sequence by folder or box title of Daniels' research material. The principal contents of Daniels' research folders are sequences of undated manuscript notes, only occasionally titled but often paginated and kept together with treasury tags; data, in manuscript form or automatically generated; and off-prints and photocopies of published material. Additionally there may be notes in hands other than Daniels' and a little correspondence. Topics include 'bundles' and epidemics and a number of Daniels' folders were identified with the names of colleagues including D.J. Bartholomew and D.R. Cox. The earliest surviving material relates to the

wartime work on navigational problems, and the postwar Decca Navigator System papers which were sent to Daniels in 1947 probably relate to this work.

Section C, Lectures and publications, is the largest in the collection. There is a significant record of Daniels' university teaching at Cambridge and Birmingham arranged alphabetically by folder title. Course topics include 'Design of Experiments', Epidemics, Mechanics and 'Multivariate Analysis'. The documentation may include Daniels' manuscript lecture notes, lists of students taking the courses, examples and problem sheets, and related material from colleagues. Daniels' annotation of his lecture notes gives some indication of how lecture courses were adapted over time. There is a shorter sequence of lecture course material arranged alphabetically by colleague. Amongst those represented are F.J. Anscombe, M.S. Bartlett, E.L. Lehmann and D. Williams. There is a good record of Daniels' seminar and conference papers for the last ten years of his life, 1990-2000. The documentation is principally transparencies and manuscript notes. For conferences in Uppsala, Sweden, in 1990 and Ascona, Switzerland, in 1995 and 2000 there is also correspondence concerning the arrangements for Daniels' participation in the meeting. Daniels' publications are represented by his bibliography and a good set of off-prints, 1932-2000. There is also a little miscellaneous correspondence and papers about publications by Daniels and G.A. Barnard, 1965-2000.

Section D, Correspondence, is not extensive. With the exception of brief correspondence *re* the Golden Jubilee of the Statistical Institute, Calcutta in 1981, it is the contents of a single folder, covering the period, 1992-1999. The correspondence is predominantly scientific and includes photocopies and manuscript drafts of Daniels' replies.

There is also an index of correspondents.

#### ACKNOWLEDGEMENTS

We are very grateful to Mrs Daniels for making the papers available for cataloguing and for a generous donation in support of the work.

P. Harper  
T.E. Powell  
Bath 2002



**SECTION A                      NOTEBOOKS                      A.1-A.38**

A.1-A.31                      STUDENT NOTEBOOKS

A.32-A.38                      OTHER NOTEBOOKS

**A.1-A.31                      STUDENT NOTEBOOKS**

A.1-A.13                      University of Edinburgh

A.14-A.31                      University of Cambridge

**A.1-A.13                      University of Edinburgh                      1931-1935 and n.d.**

Daniels studied mathematics and natural philosophy at Edinburgh graduating MA in 1933.

A.1                      Hardback University of Edinburgh notebook labelled on front cover 'Mathematics 1 Foundations of Analysis (Edge) Higher Algebra & Geom (Ruse)'. N.d.

Inscribed inside front cover with Daniels' name and Edinburgh address '8 Millerfield Place'.

Used for notes on lectures by 'W.L. Edge' paginated 1-86 and by 'Dr [? H.S.] Ruse' paginated 89-175.

A few loose papers enclosed.

A.2                      Hardback notebook labelled on front cover 'Mathematics 1. Foundations of Analysis (Ruse) Relativity (Whittaker)'. N.d.

Inscribed inside front cover with Daniels' name and Edinburgh address, book list and contents list.

Used for notes on lectures by 'Dr Ruse' on 'Foundations of Analysis or Functions of a real variable' paginated 1-84.

Used for notes on lectures by 'Prof E.T. Whittaker' on 'Relativity' paginated 85-183.

E.T. Whittaker was Professor of Mathematics at Edinburgh, 1912-1946.

## Notebooks

- A.3 Hardback University of Edinburgh notebook labelled 'Mathematics 2. General Analysis:- 1. Complex variable Gibb 2. Partial Diff. Equations Prof W.' N.d.
- Inscribed inside front cover with Daniels' name and Edinburgh address.
- Used for notes on lectures by 'Mr [? David] Gibb' on 'General Analysis Functions of a complex variable' paginated 1-77.
- Used for notes on lectures by 'Prof. [E.T.] Whittaker' on 'Partial differential equations & Calculus of variations' paginated 81-[145].
- There are three unidentified caricature sketches drawn on the inside back cover.
- A few loose papers enclosed.
- A.4 Hardback notebook labelled on front cover 'Mathematics 2. (i) Ince Comp. Var. (ii) McCrea P.D. Eqs.' N.d.
- Inscribed inside front cover with Daniels' name and Edinburgh address and contents list.
- Used for notes on lectures by 'Dr [? E.L.] Ince' on 'Functions of a complex variable' paginated 1-71.
- Used for notes on lectures by 'Dr McCrea' on 'Partial Differential Equations' paginated 72-145.
- Appendix paginated from the back [I]-XV.
- W.H. McCrea (later Sir William) was Lecturer in Mathematics at Edinburgh, 1930-1932.
- A.5 Hardback notebook inscribed inside front cover with Daniels' name. 1932.
- First page headed 'Differential equations Dr McCrea'. Used for notes on lectures by McCrea paginated 1-52.
- Page 53 headed '1932 Tutorials on Partial Diff. Equations (McCrea)'. Used for notes *re* tutorials, '14.1.32' and '26.1.32' paginated 53-77.
- Used for unpaginated sequences of notes headed on their respective first pages 'Determinants McCrea', '2nd Order Diff. Eqns. [Richard] Courant' and 'Use of Green's function in the soln. of the equation of conduction. ([H.S.] Carslaw - Theory of Conduction of heat)'.

### Notebooks

- A.6 Hardback notebook inscribed on front cover 'Maths' and inside front cover with Daniels' name and contents list. N.d.
- The contents list, which may not apply to the whole book, indicates that it was used for 'Inter hon. Maths 2nd t[er]m (continued)' notes on ? lectures on 'Determinants' and 'Integral Calculus', and '3rd t[er]m' notes on ? lectures on 'Solid geom (anal.)' and 'Homogeneous coord'. Unpaginated
- From about halfway through the book and after a gap of a number of unused pages there are notes on 'Integration' which are headed 'contd.' and 'Oppenheim'. These are followed without a break by notes headed 'Prof E.T. Whittaker', 'Projective Geometry' and '3rd term'. Unpaginated.
- A. Oppenheim (later Sir Alexander) was Lecturer in Mathematics at Edinburgh 1930-1931.
- A.7 Hardback notebook inscribed on front cover 'Optics Inter Hon'.
- Inscribed inside front cover with Daniels' name and Edinburgh address and 'Books used'. N.d.
- First page headed 'Inter Honours Course in Optics'.
- Used for notes on 'Geometrical Optics' paginated 1-56 and 'Physical Optics' paginated 57-135.
- A.8 Hardback notebook labelled on front cover 'Applied Mathematics Dynamics [C.G.] Darwin 1931-1932 Hydrodynamics Schlapp 1932-1933 Math. Electricity Darwin'.
- Inscribed inside front cover with contents list and Daniels' name and Edinburgh and Cambridge addresses.
- Used for notes on Darwin's lectures on 'Advanced Dynamics' paginated 1-149, Schlapp's lectures on 'Hydrodynamics and Waves' paginated 151-233 and Darwin's lectures on 'Mathematics Electricity' paginated 235-[338].
- There are caricature sketches of Schlapp and Darwin on pages 150 and 234, respectively.
- A few loose papers enclosed.
- C.G. Darwin (later Sir Charles) was Tait Professor of Natural Philosophy at Edinburgh, 1924-1936.

### Notebooks

- A.9                      Hardback University of Edinburgh notebook labelled on front cover 'Electricity 1 [G.A.] Carse Final Optics [J.R.] Milne'. N.d.
- Used from the front for notes on lectures by 'Milne' on 'Final Optics'. Unpaginated.
- Used from the back for notes on lectures by 'Carse' on 'E.I.' Unpaginated.
- A few loose papers enclosed.
- A.10                     Softback notebook inscribed on front cover 'H. Daniels' and 'Wave Mechanics (McCrea)'. 1932.
- Inscribed inside front cover with Daniels' name and Edinburgh address (Clare College Cambridge address added later) and book list.
- Used for notes on lectures by W.H. McCrea on 'Wave Mechanics (1932)'. Paginated 1-38.
- Also used for notes on F.A. Lindemann *The physical significance of quantum theory*, 1932.
- A.11                     Softback notebook inscribed on front cover and on first page 'Optics' and 'C.G. Darwin'. N.d.
- Unpaginated (except for first three pages).
- A few loose papers are enclosed.
- A.12                     Softback notebook inscribed on front cover 'Miscellaneous Examples' and inside front cover with Daniels' name and Edinburgh address and contents list. N.d.
- From the front the first 37 pages are paginated. Many pages unpaginated.
- From the back are notes headed 'Hydrodynamics' paginated I-[VIII].
- A few loose papers are enclosed.
- A.13                     Softback notebook inscribed 'F.& D.' The inscription 'HydroDyans & Waves' is crossed out. N.d.
- Used from the front and the back.
- Listed under Edinburgh because same format as A.10-A.12 and purchased in Edinburgh (see inside back cover) but that does not preclude use in Cambridge.

## Notebooks

**A.14-A.33**                      **University of Cambridge**                      **ca 1933-1935**

In 1933 (the year he graduated from Edinburgh) Daniels won a Major Mathematics Scholarship to Clare College Cambridge. He left to become statistician, Wool Industries Research Association, 1935-1947 (with a period with the Ministry of Aircraft Production during the Second World War) returning to Cambridge in 1947 as Lecturer in Mathematics.

A.14-A.22 are softback notebooks in the same format as A.10-A.13 identified on front cover with 'Collins' Silver Series No.6'.

A.23-A.28 are similar in format to A.14-A.22 but identified on front cover with 'Weatherhead & Son, 1 Bene't Street, Cambridge'.

A.29-A.31 are similar in format to the preceding groups but lack any identification as to commercial series or supplier.

A.14                      Softback notebook as inscribed on front cover 'M W F 10' and 'Relativity Prof. Eddington'. N.d.

Used for notes on Eddington's lectures on theory of relativity.

A.S. (Sir Arthur) Eddington was Plumian Professor of Astronomy, Cambridge, 1913-1944.

A.15                      Softback notebook inscribed on front cover 'Prof Sir A.S. Eddington Relativity Theory of Electrons' and 'Theory of Estimation (notes on R.A. Fisher M S Bartlett)'. N.d.

Used for sequences of notes of lectures and/or Daniels' reading.

A.16                      Softback notebook inscribed on front cover 'Tu. Th. S. 10-11' and 'Electricity III:- Dr Goldstein'. N.d.

Inscribed inside front cover with Daniels' name and Cambridge College.

Used for notes on lectures by Goldstein on electricity.

S. Goldstein was Lecturer in Mathematics, Cambridge, 1931-1945.

A.17                      Softback notebook inscribed on front cover 'M.W.F. 5.15-6.15' and 'Complex Variable Mr Ingham'. N.d.

Inscribed inside front cover with Daniels' name and Cambridge College.

A.E. Ingham was University Lecturer in Mathematics, Cambridge, 1930-1953.

### Notebooks

- A.18                      Softback notebook inscribed on front cover 'M W F 10-11' and 'Algebra & Tensors:- Mr Newman'. N.d.
- Inscribed with Daniels' name inside front cover.
- Used for notes on lectures by Newman on Algebra and Tensors. Unpaginated.
- A few loose pages are enclosed.
- M.H.A. Newman was University Lecturer in Mathematics, Cambridge, 1927-1945.
- 
- A.18A                     Softback notebook inscribed 'M W F. 9-10' and 'Dynamics:- Mr Pars'. N.d.
- Used for notes on lectures of Pars on dynamics, Unpaginated.
- Loose papers are enclosed.
- L.A. Pars was a Fellow of Jesus College, Cambridge from 1921.
- 
- A.19                      Softback notebook inscribed 'M W F. 11-12' and 'Hydrodynamics Mr Pars'. N.d.
- Used for notes on lectures of Pars on hydrodynamics, Unpaginated (except for the first five pages).
- A few loose papers are enclosed.
- 
- A.20                      Softback notebook inscribed 'Tu. Th. S. 9-10' and 'Projective Geometry Mr White'.
- Inscribed inside front cover with Daniels' name and Cambridge College at the top and his Edinburgh address at the bottom.
- Used for notes on lectures on projective geometry. Unpaginated.
- 
- A.21                      Softback notebook inscribed 'M W F 11' and 'Electric Waves Mr Woodward'. N.d.
- Inscribed inside front cover with Daniels name and Cambridge College.
- Used for notes on Woodward's lectures on electric waves. Unpaginated.
- A few loose papers are enclosed.

### Notebooks

- A.22                      Softback notebook inscribed on front cover 'App. Math. Sheets. &c.' N.d.  
  
Used for ? worked examples. First page headed 'Rev. Dynes' and 'Sheet I'. Unpaginated.  
  
A few loose papers are enclosed.
- A.23                      Softback notebook inscribed on front cover 'M W 10' and 'Combinations of Observations Prof. Eddington'. N.d.  
  
Inscribed inside front cover with Daniels' name and Cambridge College.  
  
Caricature sketch of Eddington drawn inside front cover.  
  
Used for notes on lectures by Eddington on combinations of observations. Unpaginated.  
  
A few loose papers are enclosed.
- A.24                      Softback notebook inscribed on front cover 'T. Th. S 11' and 'Dynamical Theory of Gases Dr Powell'. N.d.  
  
Inscribed inside front cover with Daniels' name and Cambridge College.  
  
Used for notes on Powell's lectures on dynamical theory of gases. Paginated 1-100.  
  
A few loose papers are enclosed
- A.25                      Softback notebook (same format as preceding) inscribed on front cover 'T Th S. 9. 10' and 'Differential Geometry Mr Room Heaviside Operational Calculus L.A. Pipes J. app. Phys. 1939 March, April, May'.  
  
Used for notes for lectures by Room on differential geometry, notes on Pipes' papers on the operational calculus and notes on 'Sequential Analysis F.J. Anscombe'. Unpaginated except for first few pages.  
  
A few loose papers are enclosed.  
  
T.G. Room was Lecturer in Mathematics, Cambridge, 1923-1935 (Professor of Mathematics, University of Sydney, 1935-1968).
- A.26                      Softback notebook (same format as preceding) inscribed on front cover 'Monday 5-15' and 'Field Experimentation Dr Sanders'. N.d.  
  
Inscribed inside front cover with Daniels' name and Cambridge College.

/...

### Notebooks

- /... Used for notes on [H.G.] Sanders' lectures on field experimentation. Many pages unused.
- Enclosed loose is duplicated sheet headed 'Statistics (3)' with practical examples from agriculture.
- A.27 Softback notebook (same format as preceding) inscribed 'M W F. 11-12' and 'Intro' Quantum Th. H M. Taylor'. N.d.
- Inscribed inside front cover with Daniels' name and Cambridge College and book list.
- Used for notes on lectures by Taylor on introductory quantum theory. Many pages unused.
- H.M. Taylor was Lecturer in Mathematics, Cambridge, 1934-1945.
- A.28 Softback notebook (same format as preceding) inscribed 'T.Th.S. 12' and 'Quantum Theory of Spectra Mr Wilson'. N.d.
- Inscribed inside front cover with Daniels' name and Cambridge College.
- Used for notes on lectures by [? A.H.] Wilson on quantum theory of spectra. Paginated 1-73.
- A few loose papers are enclosed.
- A.H. Wilson was University Lecturer in Mathematics, Cambridge, 1933-1945.
- A.29 Softback notebook inscribed on front cover 'M W F 9-10' and 'Elliptic Functions Ingham'. N.d.
- Used for notes of lectures by A.E. Ingham on elliptic functions. Unpaginated.
- A.30 Softback notebook inscribed on the cover 'Differential Equations Newman'. N.d.
- Caricature sketch on front cover.
- Used for notes of lectures by M.H.A. Newman on differential equations. Unpaginated.
- A few loose pages are enclosed.



### Notebooks

A.31 Softback notebook inscribed on front cover M.W.F. 10' and 'Thermodynamics H.M. Taylor'. N.d.  
  
Inscribed inside front cover with list of books and Daniels' name and Cambridge College.  
  
Used for notes on lectures by Taylor on thermodynamics. Paginated 1-[72].

A.32 Large format binder labelled inside front cover with Daniels' name and Cambridge College. N.d.  
  
Used for sequence of notes paginated 1-130.

**A.33-A.38 OTHER NOTEBOOKS 1950 and n.d.**

A.33 and A.34 are public service softback notebooks.  
  
A.35-A.38 are softback notebooks of similar format.

A.33 Softback notebook 'supplied for the public service' inscribed on the front cover with Daniels' name and 'Grimshaw – Hilbert Space (and other notes)'.  
  
Inscribed inside front cover with Daniels' name and address 'A.W.A.S, [?Air Ministry Air Warfare Analysis Section] H.M.S.O Annexe, Wealdstone, Middx'.  
  
Daniels spent three years with the Ministry of Aircraft Production, 1942-1945. A few of the notes at the front of the notebook may date from this period. However the principal sequence in the notebook is headed 'Miss Grimshaw Hilbert Space Lent 1950'. Daniels was Lecturer in Mathematics, Cambridge, 1947-1957.  
  
The notes beginning 'Lent 1950' are paginated 1-122.

A.34 Softback notebook 'supplied for the public service' inscribed on the front cover 'Anscombe DofE [Design of Experiments]'. N.d.  
  
Used for a number of sequences of notes: 'Notes on Wald Sequential Analysis Theory' paginated 1-6; 'H Cramer Stochastic Processes April 1950' paginated 1-10; and '[F.J.] Anscombe Design of Expts' paginated 1-[79].  
  
Four duplicated example sheets are enclosed.

### Notebooks

- A.35                      Softback notebook inscribed on front cover 'Distribution theory Distance'. N.d.                      S&L
- Used for notes from the front and the back. Most pages not used.
- A few loose papers are enclosed.
- 
- A.36                      Softback notebook inscribed on the front cover 'N.P. Confidence Regions for regression'. N.d.
- Used for sequences of notes.
- Loose papers enclosed.
- 
- A.37                      Softback notebook inscribed on the front cover 'Randomisation'. N.d.
- Used for notes from the front and the back.
- Loose papers enclosed.
- 
- A.38                      Softback notebook inscribed on the front cover 'Time Intervals'. N.d.
- Used for notes from the front and the back. Many pages not used.
- Loose papers enclosed.

**SECTION B**

**RESEARCH**

**B.1-B.81**

The principal contents of Daniels' research folders are sequences of undated manuscript notes, only occasionally titled but often paginated and kept together with treasury tags; data, in manuscript form or automatically generated; and off-prints and photocopies of published material. Additionally there may be notes in hands other than Daniels' and a little correspondence.

The arrangement is an alphabetical sequence by box or folder title. Contents of untitled folders are at the end of the sequence.

- B.1-B.4                    'Bartholomew'.  
Contents of folder so inscribed divided into four for ease of reference: manuscript notes, data, photocopy of pages from publication, and correspondence with D.J. Bartholomew *re* 'Poisson approximation for the epidemic model', 1977.
- B.5-B.13                'Bundles 2'. Contents of box so inscribed.
- B.5                        'Twisted Yarn 2'. Contents of folder so inscribed: manuscript notes, letter from 'Richard [L. Smith]' enclosing 'two sets of notes, dated 1986 and 1987'. Smith wrote from the Department of Statistics, University of North Carolina at Chapel Hill, 10 February 1992.  
  
The notes referred to in Smith's letter were found in the 'Twisted Yarn 4' folder. See B.9-B.12.
- B.6                        'Twisted Yarn 3'. Contents of folder so inscribed: manuscript notes and data, n.d.
- B.7-B.12                'Twisted Yarn 4'. Contents of folder so inscribed divided into six for ease of reference.
- B.7, B.8                 Photocopies of correspondence and other papers *re* refereeing an article or found with them, 1989-1990, presumably sent to Daniels for information.  
  
2 folders.

**Research**

- B.9-B.12                    Manuscript notes by Daniels and photocopies of notes by R.L. Smith. Smith's notes are headed 'Notes written in 1986' (B.9) and 'Iterated Bundle Scheme 29/3/87' (B.12) and were sent to Daniels in 1992. See B.5.
- 4 folders.
- B.13                        'Martin-Lof's problem'. Contents of folder so inscribed: manuscript notes, n.d.
- B.14                        'Cox'.
- Contents of folder so inscribed: two typescript draft papers by D.R. Cox sent to Daniels for comment, n.d., latest bibliographical reference, 1977.
- B.15, B.16                'C. Rogers B[rownian] M[otion] on manifold'.
- Contents of folder so inscribed.
- B.15                        Manuscript notes on back of computer print-outs dated 1985.
- Photocopy of manuscript draft titled 'Stochastic Differential Geometry' beginning 'The main purpose of these seminars is to give a simple-minded construction of Brownian motion on a Riemannian manifold' and inscribed at the head of the first page 'H.E.D[aniels]'. Paginated 1-10. N.d.
- Photocopy of a manuscript draft on Brownian motion. Paginated 14-[17]. N.d.
- B.16                        Typescript drafts of two papers on Brownian motions of ellipsoids by J.R. Norris, L.C.G. Rogers and David Williams, n.d., latest bibliographical reference 1981.
- B.17-B.27                'The Decca Navigator System'.
- Contents of folder so labelled: 'complete set' of handbooks with covering letter, manuscript notes, and two duplicated typescripts, 1947, 1949 and n.d.
- B.17-B.24                Eight Decca Navigator System handbooks, sent to Daniels, 28 January 1947.
- B.17                        'European Planning and Frequency Requirements'.

**Research**

- B.18 'Scientific Aid to Modern Survey'.
- B.19 'The Problem of Civil Air Navigation and Traffic Control'.
- B.20 'Lane Identification'.
- B.21 'Traffic Control Unit'.
- B.22 'Air Manual'.
- B.23 'The English Chain of Stations and Technical Data'.
- B.24 'Notes on Accuracy'.
- B.25 Letter sending 'a complete set of handbooks referring to the Decca Navigator System', 28 January 1947.  
Manuscript notes, n.d.
- B.26 Decca Navigator System paper 'A Plan for Air Navigation and Traffic Control'.  
6pp duplicated typescript with manuscript comments and underscoring + figures, November 1949.
- B.27 'General Principles of Track Control'.  
8pp duplicated typescript + appendix and figures.
- B.28, B.29 'Ep. Appendix'.  
Contents of folder so inscribed.
- B.28 Manuscript notes, n.d.

## Research

- B.29 'The mathematical theory of combat' by L.B.C. Cunningham.  
22pp duplicated typescript, n.d. but probably prepared during the Second World War.
- B.30 'Martin-Löf 5 Salminen'.  
Contents of folder so inscribed: manuscript notes and data, n.d.; off-print by Daniels and T.H.R. Skyrme, 1985.
- B.31-B.34 'Mean Deviation'.  
Contents of folder so inscribed divided into four for ease of reference: manuscript notes, n.d. and published papers by Daniels and others, 1940-1997.
- B.35 'Mean Deviation'.  
Contents of folder so inscribed: manuscript notes and data, n.d.
- B.36, B.37 'Perturb IV'.  
Contents of folder so inscribed divided into two for ease of reference: manuscript notes on simple epidemics including print-out of email dated 23 November 1994 (B.37) used for notes.
- B.38-B.40 'Reprints for Persi Diaconis'.  
Contents of folder so inscribed divided into three for ease of reference: manuscript notes, including sequence dated 1998, 1p typescript note by David Siegmund dated April 1999 and headed 'Problem for Henry Daniels', off-prints and photocopies of published papers by Daniels and others 1951-2000.
- B.41, B.42 'Selection and Drift'.  
Contents of folder so inscribed divided into two for ease of reference: manuscript notes and photocopy of published paper 1973.

## Research

- B.43-B.47            'Simple Epidemic'.  
  
Contents of folder so inscribed divided into five for ease of reference: manuscript notes and data. N.d.
- B.48-B.50            'Stochastic Iteration'.  
  
Contents of folder so inscribed divided into three for ease of reference: manuscript notes, n.d. and off-print and photocopies of published papers by Daniels and others 1951-1976.
- B.51                    'Tables'.  
  
Contents of folder so inscribed: manuscript notes and duplicated pages from published sources, n.d.
- B.52                    'UGC [University Grants Committee] figures for intake'.  
  
Contents of folder so inscribed: data and correspondence, 1977.
- B.53-B.56            'Variance of epidemics I'.  
  
Contents of folder so inscribed divided into four for ease of reference: manuscript notes and data, n.d.
- B.57-B.61            'Variance of epidemics II'.  
  
Contents of folder so inscribed divided into five for ease of reference: manuscript notes, including sequence headed 'simple epidemic', and offprints by Daniels 1960-1982 and n.d. latest bibliographical reference 1986.
- B.62-B.65            'Variance of epidemics LT of ep'.  
  
Contents of folder so inscribed divided into four for ease of reference: manuscript notes and data, n.d.

### Research

- B.66 Contents of untitled folder: manuscript draft headed 'Navigational statistics' + diagrams.  
  
These papers relate to wartime work. The diagrams have an 'A.W.A.S.', [?Air Ministry Air Warfare Analysis Section] reference and are dated in 1942.
- B.67, B.68 Contents of untitled folder divided into two for ease of reference: manuscript notes including sequence headed 'simple epidemics', data, and duplicated pages from 'Perturbation Approximations for Epidemics' by Daniels, n.d., latest bibliographical reference 1986.  
  
Found with papers on variance of epidemics at B.53-B.65.
- B.69 Contents of untitled folder: manuscript notes, n.d.  
  
Found with papers on variance of epidemics at B.53-B.65.
- B.70-B.73 Contents of untitled folder divided into four for ease of reference: manuscript notes, data, and two offprints by others *re* bootstrap procedures and saddlepoint approximations, 1988, 1990.
- B.74, B.75 Contents of untitled folder divided into two for ease of reference: manuscript notes and data; photocopied pages on saddlepoint approximation from published work. N.d.
- B.76-B.80 Contents of untitled folder divided into five for ease of reference: manuscript notes, data, correspondence 1970-1971, off-prints and photocopies of published papers, 1941-1971.  
  
Includes papers *re* work on epidemics.
- B.81 Contents of untitled folder: 1p manuscript notes on career of John Wishart.



**SECTION C                      LECTURES AND PUBLICATIONS                      C.1-C.181**

C.1-C.164                      LECTURES

C.165-C.181                      PUBLICATIONS

**C.1-C.164                      LECTURES                      1947-2000**

C.1-C.71                      University teaching by Daniels

C.72-C.94                      University teaching by others

C.95-C.164                      Seminar and conference papers

**C.1-C.71                      University teaching by Daniels                      1947-1978**

An alphabetical sequence by folder title.

C.1-C.4                      'Design of Experiments'.

Contents of folder so inscribed.

C.1-C.3                      Lists for 1956 and 1957 of students taking the course and manuscript notes in ink titled 'Design of Experiments' and paginated 1-90, with manuscript additions, comments, etc in pencil; unpaginated manuscript notes.

3 folders.

The first page of the paginated sequence has the inscription 'Homage to D.R. Cox on whose notes this course is based'.

C.4                      29pp duplicated typescript and manuscript sheets for design of experiments course.

C.5                      'Epidemics Lectures'.

Contents of folder so inscribed.

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### Lectures and publications

- /...
- Papers attached with treasury tag: list for 1978 of students taking the course; manuscript notes in ink titled 'Epidemics' and paginated 1-14 with intercalated pages in ink and manuscript additions, comments etc. in pencil.
- Marginal indications suggest that the course was also given in 1977.
- Photocopied manuscript notes on epidemics sent to Daniels by a University of Birmingham colleague, n.d.
- Miscellaneous unidentified manuscript notes.
- C.6-C.8 'Mechanics I H.E. Daniels Statistical Laboratory'.
- Contents of folder so inscribed.
- C.6, C.7 Papers found attached with a single treasury tag divided into two for ease of reference: manuscript notes in ink titled on the first page 'Mechanics Pt I (mich. term) Calculus of Vectors' and paginated 1-69, with some intercalated pages and manuscript additions, comments, instructions etc, in pencil.
- Marginal markings indicate that the notes were in use 1950-1954.
- C.8 Two short sequences of notes, one with lists of students for 1951, 1953 and 1954.
- C.9-C.11 'Mechanics & Differential Equations'.
- Contents of folder so inscribed.
- The folder was also inscribed with Daniels' address at Clare College Cambridge where he was a student 1933-1935. However, the contents of the folder may date from his postwar return to Cambridge where he was a lecturer in mathematics, 1947-1957.
- Papers attached by a single treasury tag divided into three for ease of reference: manuscript notes in ink titled on first page 'Mechanics and Differential Equations' which is also headed with Daniels' name.
- The notes are paginated 1-119 with manuscript additions, comments, instructions etc in ink and pencil.
- C.12-C.15 'Multivariate Analysis'.
- Contents of folder so inscribed.

### Lectures and publications

- C.12 Off-prints, 1947, 1952, 1962; miscellaneous manuscript notes; lists of students 1954-1956.
- C.13 Unpaginated sequences of manuscript notes.
- C.14 Papers attached with treasury tag: manuscript notes in ink titled 'Multivariate Analysis' and paginated 1-46, with manuscript additions, comments, instructions, etc in pencil.  
  
Marginal markings indicate that the notes were in use 1954-1965.
- C.15 Papers attached with treasury tag: manuscript notes paginated 44-51.  
  
1p manuscript notes from the literature.
- C.16 'Multivariate Analysis (Short Course)'.  
  
Contents of folder so inscribed: duplicated notice of Sheffield University Department of Probability and Statistics for Special Lectures for PhD Students by Daniels on Multivariate Analysis; 31pp manuscript notes headed 'Multivariate Analysis' and 'H.E.D.' N.d. but while Daniels was Professor of Mathematical Statistics at Birmingham, 1957-1978.
- C.17, C.18 'Nat.Sci Whole Subject'.  
  
Contents of folder so inscribed.
- C.17 'Natural Sciences Tripos Mathematics (Whole Subject) Statistics (Easter Term 1956)'.  
  
37pp duplicated typescript course notes.
- C.18 'Natural Sciences Tripos, Mathematics (Whole Subject) and Mathematical Tripos (Part I) Statistics (Lent and Easter Terms 1959)'.  
  
Duplicated typescript course notes paginated 29-51.  
  
Miscellaneous duplicated typescript sheets *re* statistics courses, including problem sheet dated 25 November 1957.

### Lectures and publications

- C.19 'Nonparametric Inference'.  
Contents of folder so inscribed: sequences of notes attached with treasury tags for lecture course, n.d. but marginal markings indicate that the notes were used in 1971.
- C.20 'Prob.[ability] Theory Notes HED[aniels]'.  
Contents of folder so inscribed: manuscript notes for lecture course paginated 4-39, n.d. but marginal markings indicate that the notes were used in 1958.
- C.21, C.22 'Sequential Procedures'.  
Contents of folder so inscribed.
- C.21 Papers attached with treasury tag: lists of students for 1963-1965, 1968; book list; manuscript notes in ink titled on first page 'Sequential Procedures' and paginated 1-40, with manuscript additions, comments, etc.; variously paginated short sequences of notes.
- C.22 Variously paginated short sequences of notes attached with treasury tags.  
Sequence paginated 41-49 is a continuation of the sequence in the preceding folder.
- C.23, C.24 'Sequential Sampling and Inspection procedures'.  
Contents of folder so inscribed.
- C.23 Papers attached with treasury tag: manuscript notes with same title as folder paginated 1-15. N.d.
- C.24 Papers attached with treasury tag: manuscript notes titled 'Girshik's discrimination between two populations' paginated 16-40; manuscript notes titled 'Industrial Inspection (Extended Introduction)' paginated i-ii.
- C.25-C.30 'Southfield Course'.

### Lectures and publications

- /...
- Contents of folder so inscribed: papers for University of Birmingham Institute of Engineering Production courses, 1961-1966.
- Southfield was the name of the building that housed the Institute of Engineering Production.
- C.25
- Course programme for University of Birmingham Institute of Engineering Production course on 'Time-Series Analysis', 10-14 July 1961.
- Daniels is listed as a course tutor. He gave all the talks on the first day which formed a preliminary short course in standard statistical theory. He contributed to the rest of the course with talks on stochastic processes, stationary time-series and information theory.
- C.26
- Course programme for University of Birmingham Institute of Engineering Production course on 'Control and Optimisation of Industrial Processes', 16-24 March 1964.
- Daniels is listed as one of the speakers and talked about time-series analysis.
- Course programme for University of Birmingham Institute of Engineering Production course on 'Statistics for Industry', 6-17 April 1964.
- Daniels is listed as one of the speakers and talked about time-series.
- C.27
- Course programme for University of Birmingham Institute of Engineering Production course on 'Dynamical Programming and Optimal Control Theory', 15-26 March 1965.
- Daniels is not listed as a speaker.
- Course programme for University of Birmingham Institute of Engineering Production course on 'Statistics for Industry', 29 March-6 April 1965.
- Daniels is listed as a speaker and talked about time-series.
- C.28
- Course programme for University of Birmingham Institute of Engineering Production course on 'Operational Research in Marketing, 17-28 January 1966.
- Daniels is listed as a speaker and talked on time-series analysis and regression analysis, and discriminant analysis.

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### Lectures and publications

- /...
- Course programme for University of Birmingham Institute of Engineering Production course on 'Statistics for Industry', 21 March-1 April 1966.
- Daniels is listed as a speaker and gave the introductory lecture and talked about time-series.
- C.29 Manuscript notes etc including 11pp sequence headed 'Estimation of the Spectrum of a stationary time series'. N.d.
- C.30 1p data for time series course; 12pp manuscript notes headed 'Session 19 Geometrical Techniques in Statistics'; and 6pp manuscript notes on 'Statistics. Inference from observations (sample) to underlying situation'. N.d.
- C.31-C.34 'Stationary Proc[esses]'.  
Contents of folder so inscribed.
- C.31 'Spectral Analysis and the Estimation of Linear Open Loop Transfer Functions'.  
14pp duplicated typescript paper by G.M. Jenkins, Imperial College, London.  
The paper was read at a time-series symposium, Brown University, Rhode Island, USA, June 1962.  
Jenkins was a speaker (with Daniels) at a number of University of Birmingham Institute of Engineering Production courses in the 1960s (C.25-C.30). See also C.32.
- C.32 'An example of the Estimation of a Linear Open Loop Transfer Function'.  
20pp duplicated typescript + figures and references by G.M. Jenkins, Imperial College, London. N.d., latest bibliographical reference 1962.
- C.33 Various paginated and unpaginated sequences of notes by Daniels titled 'Stationary Processes', 'The Spectrum' and 'Stochastic Processes'. N.d.  
Probably related to Daniels' courses and teaching on these subjects.

### Lectures and publications

- C.34 'Stationary processes'.  
Manuscript notes in ink paginated 47-78, with manuscript additions, comments, instructions etc in pencil. N.d but marginal markings indicate that the notes formed course material used by Daniels over an extended period 1954-1966.
- C.35-C.39 'Stationary Processes 1968-69 69-70'.  
Contents of folder so inscribed.
- C.35 'Recent Developments in Time-Series Analysis' by C. Chatfield, University of Bath.  
10pp typescript, n.d. latest bibliographical reference 1976.
- C.36 Papers attached by treasury tag: list of students for course on 'Time Series 1978', list of students for course on 'Time Series and Prediction sp. 1977'; 43pp manuscript notes in ink headed 'Stationary processes' and 'HEDaniels' with manuscript inscription above the title 'Time Series and prediction Mostly about', manuscript revision, underscoring, comments and instructions, etc in pencil.
- C.37 Papers attached by treasury tag: variously paginated manuscript drafts in ink with manuscript revision in pencil.  
Includes marginal instructions in pencil for 1978 course.
- C.38 Papers attached by treasury tag: variously paginated manuscript drafts with manuscript revision and notes in pencil.
- C.39 Manuscript drafts of 'Examples' for course.  
'Suggested Syllabus for Proposed Stochastic Processes Course'. 1p typescript, n.d.  
'Suggested Syllabus for Proposed Time-Series and Forecasting Course'. 1p typescript, n.d.

### Lectures and publications

- C.40-C.42 'Statistics I'.  
Contents of folder so inscribed.  
  
Papers originally attached with a single treasury tag divided into three for ease of reference: student list for 1956; manuscript notes in ink titled 'Statistics I' and dated '(mich. 1950)' on the first page and paginated 1-101, with manuscript additions, comments, instructions, etc. in pencil.  
  
Marginal markings indicate that the notes were used 1950-1957.
- C.43-C.45 'Statistics II'.  
Contents of folder so inscribed.  
  
Papers originally attached by a single treasury tag divided into three for ease of reference: manuscript notes in ink paginated 1-102 with a few unpaginated pages of notes and a few paginated pages out of sequence, with manuscript additions and corrections in ink and pencil; student lists for 1948-1950.
- C.46-C.48 'Statistics II'.  
Contents of folder so inscribed.
- C.46, C.47 Papers originally attached by a single treasury tag divided into two for ease of reference: student lists for 1954 and 1957; list of practical statistics sessions for 1954; manuscript notes for course paginated 102-172 in ink, with some manuscript additions, comments, instructions etc in pencil.  
  
Marginal markings indicate that the notes were in use 1950-1957.
- C.48 Papers attached with treasury tag: variously paginated sequences of manuscript notes in ink, with some manuscript additions, comments, instructions etc.  
  
Marginal markings indicate that the notes were in use as early as 1951.
- C.49-C.52 'Statistics 2/33 Autumn'.  
Contents of folder so inscribed.
- C.49-C.51 Papers originally attached by a single treasury tag divided into three for ease of reference.



### Lectures and publications

- C.49 Student lists for 'Advanced Statistics' 1958-1959 - 1960-1961, 'Statistics 2' for 1961-1962 - 1966-1967, and course '2/33' 1974-1975.
- C.50, C.51 Manuscript notes in ink titled 'Statistics' on first page and paginated 1-106 (not a complete sequence) with manuscript additions, comments, instructions, etc in pencil.  
  
Marginal markings indicate that the notes were in use 1958 - 1974-1975.  
  
2 folders.
- C.52 Miscellaneous papers including duplicated sheet headed 'Statistics 2 Tutorial 11 November 1965'.
- C.53-C.57 'Statistics 2/32 Spring'.  
  
Contents of folder so inscribed.
- C.53 Papers attached by treasury tag: manuscript notes in ink paginated 107-170, with manuscript additions, comments, instructions, etc. in pencil.  
  
Marginal markings indicate that the notes were in use 1959-1975.
- C.54-C.57 Papers attached by treasury tags: short sequences of variously paginated and unpaginated manuscript notes.  
  
4 folders.
- C.58, C.59 'Statistics III'.  
  
Contents of folder so inscribed.
- C.58 Papers attached with treasury tag: student lists 1948-1950; book list 1948; manuscript notes in ink titled 'Statistical Inference' on the first page, dated Easter term 1948 and paginated 1-51, with manuscript additions, comments, instructions for the delivery of the course in years subsequent to 1948, etc., in different coloured inks and pencil.
- C.59 Miscellaneous pages of manuscript notes.

### Lectures and publications

- C.60, C.61 'Statistics & Theory of Errors (Nat.Sci Half Subject)'.  
Contents of folder so inscribed.
- C.60 Papers attached with treasury tag: student lists for 1956; manuscript notes in ink titled 'Statistics (and theory of errors)' and paginated 1-21a, with manuscript additions, comments, instructions, etc., in pencil.  
Marginal markings indicate the notes were used in 1955 and 1956.
- C.61 Papers attached with treasury tag: manuscript notes in ink paginated 22-43, with manuscript additions, comments, instructions, etc., in pencil; student lists for unidentified year or years.  
Marginal markings indicate the notes were used in 1955 and 1956.
- C.62, C.63 'Statistics (Math. Subs)'.  
Contents of folder so inscribed.
- C.62 List of students for unidentified year; course outline for 'Whole-Subject Mathematics Statistics Syllabus'; manuscript notes in ink titled 'Statistics (Math. Subsidiary)' and paginated 1-15, with manuscript additions, comments and instructions etc., in pencil.  
Marginal markings indicate that the notes were used in 1957.
- C.63 Miscellaneous notes including 'revision'; course outline; lists of students 1957, 1958.
- C.64, C.65 'Stats Subs'.  
Contents of folder so inscribed.
- C.64 Papers attached with treasury tag: manuscript notes in ink paginated 16-66, with manuscript additions.  
Manuscript markings indicate that the notes were used in 1957 and 1958.
- C.65 Papers attached with treasury tag: manuscript notes in ink paginated 67-113; manuscript problems.

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### Lectures and publications

- /... Manuscript markings indicate that the notes were used in 1958.
- Duplicated typescript 'Mathematical Statistics Problem Sheet 9' dated 17 February 1958.
- C.66 'Stochastic Processes'.  
Contents of folder so inscribed.  
3pp duplicated typescript outline and references for four lectures on 'Statistical Inference for Markov Chains' with manuscript inscription on the first page from Joe Gani to Daniels 'For your information - a set of lectures I've given at the Stat Lab, Manchester....' N.d., latest bibliographical reference, 1956.  
34pp manuscript notes in ink titled 'Statistics - Stochastic Processes' and dated 'Easter Term '47' with manuscript additions in pencil.
- C.67, C.68 'Stochastic Processes'.  
Contents of folder so inscribed.
- C.67 Papers attached with treasury tag: student lists for a number of years between 1954 and 1966; 46pp manuscript notes in ink with some marginal notes in pencil.
- C.68 10pp duplicated manuscript for M.Sc. in Mathematical Statistics titled 'Summary of Basic Probability'. N.d.
- C.69-C.71 'Stochastic Processes 1968-69 69-70 70-71 71-72'.  
Contents of folder so inscribed.
- C.69, C.70 Papers, originally attached with a single treasury tag divided into two for ease of reference: student lists 1968-1969 - 1971-1972; manuscript notes in ink titled 'Stochastic Processes' and paginated 1-70, with manuscript additions, comments, instructions, etc. in pencil.  
Marginal markings indicate that the notes were in use 1968-1972.

### Lectures and publications

- C.71                      3pp manuscript notes (not by Daniels).  
Duplicated manuscript sheets of examples and solutions.
- C.72-C.94                      University teaching by others                      1949-1988**
- An alphabetical sequence by name of colleague.
- C.72                      F.J. Anscombe  
Contents of folder inscribed 'Design of Experiments F.J. Anscombe'.  
Manuscript notes by Daniels titled 'Design of Experiments' and headed on the first page with Anscombe's name and 'Lent term 1949'. Paginated 1-32.
- C.73, C.74                      A.J. Baddeley  
Contents of folder inscribed 'Adrian's lectures'.
- C.73                      8pp duplicated manuscript notes titled 'Random Measures and Point Processes'.  
3pp duplicated manuscript notes titled 'Examples'.
- C.74                      Duplicated typescript notes including 'Stochastic geometry Part III lectures notes by A.J. Baddeley Michaelmas 1982'.
- C.75-C.78                      M.S. Bartlett  
Contents of folder inscribed 'North Carolina Lectures on Stochastic Processes' divided into four for ease of reference: manuscript notes by Daniels titled 'Stochastic Processes by M.S. Bartlett' and paginated i-ii,1-99.
- C.79-C.81                      L. Billard  
Contents of folder inscribed 'Non-parametric methods L. Billard 1970'.
- C.79                      University of Birmingham examination paper 1971.

### Lectures and publications

- C.80 Duplicated manuscript notes: first page book list headed 'Lynne Billard' followed by sequence titled 'Non-Parametric Methods' paginated 1-39.
- C.81 Duplicated manuscript notes titled 'Measures of Correlations and paginated 1-33.
- C.82 E.L. Lehmann  
  
Contents of folder inscribed 'Statistical Inference (Berkeley notes) I. Testing hypotheses': manuscript notes by Daniels titled 'Theory of testing Hypotheses' with Lehmann's name at the head of the first page. Paginated 1-30. N.d.
- C.83 [D.V.] Lindley  
  
Contents of folder inscribed 'Foundations of Probability Theory Lindley': 30pp duplicated manuscript notes (not in Daniels' hand) with additions by Daniels. N.d.
- C.84-C.94 D. Williams
- C.84-C.88 Contents of folder inscribed 'D.W. lectures'.
- C.84 Duplicated manuscript notes titled 'Part III Course : The Calculus of Brownian Motion' comprising course outline, references, example sheet and sequence paginated 1-19. N.d. but references include the following note: 'Much of the course is based on the not yet completed book (to appear towards the end of 1986)'.
- C.85 Manuscript notes paginated 1-23. In Daniels' hand.
- C.86 Principally duplicated manuscript notes including sequences on martingales and example sheet headed with Williams's initials.
- C.87 Photocopy of article by Williams on the techniques of differential geometry. N.d., latest bibliographical reference 1980.

### Lectures and publications

- C.88 Duplicated manuscript lecture notes titled 'Martingales: recent developments, results, applications' by A.N. Shirayev of the Steklov Mathematical Institute, Moscow, USSR. N.d., latest bibliographical reference, 1980.
- C.89, C.90 Contents of folder inscribed 'D. Williams, Shirayev, Kac'. A second copy of the notes by Shirayev on martingales at C.88 has not been retained here.
- C.89 6pp duplicated manuscript notes titled 'Stochastic mechanics from a point source' and headed on the first page with the names of Williams and Aubrey Truman.
- Three photocopied pages from 'D.W. book'.
- 13pp duplicated typescript notes titled 'Probability Methods in Potential Theory'.
- These are described on the title page as 'notes taken from a lecture course given by Professor Mark Kac at the Instructional Conference on Mathematical Probability held at the Durham Colleges, 28th March to 11th April, 1963 under the auspices of the London Mathematical Society'.
- C.90 Typescript notes headed 'Chapter II Potential Theory in Three Dimensions M. Kac'. Paginated [1]-41. N.d.
- C.91-C.94 Contents of folder inscribed 'D.W. Prob flux etc'.
- C.91 101pp duplicated typescript notes by C.J. Preston on 'Random Fields' for Part III course, Cambridge, Michaelmas Term 1975.
- C.92 Two sets of duplicated manuscript notes by D. Williams on 'Brownian motion and the Riemann function' for talk to the Number Theory Seminar at Cambridge, 10 May 1988.
- Typescript 'Notes on Nelson's Stochastic Mechanics by J.R. Norris'. N.d.
- Manuscript notes on computer print-out paper dated November 1987 on verso.

### Lectures and publications

C.93 Photocopy of 1p manuscript note by Daniels beginning 'David: Here's my way of doing it - hope it's the right problem!' Signed 'Henry' and dated '26/10/87'.

3pp duplicated manuscript notes titled 'A Markovian Rainfall Model ??' signed 'David Williams' and dated '27.2.88'.

2pp and 4pp duplicated manuscript notes by Williams on 'Local time and probability flux at a space-time boundary'. N.d.

C.94 Photocopies of published papers, 1976, 1979 and n.d.

Typescript paper by Williams and T. Chan on 'An "Excursion" Approach to an Annealing Problem', n.d., latest bibliographical reference 1987.

**C.95-C.164 Seminar and conference papers 1990-2000**

C.95-C.139 Chronological sequence

C.140-C.164 Undated

C.95-C.139 Chronological sequence

C.95-C.97 Uppsala 1990

Daniels gave a paper (with G.A. Young) on 'Saddlepoint approximation for the studentized mean, with an application to the bootstrap'.

C.95 Contents of folder inscribed 'Uppsala 1990'.

Correspondence and papers *re* arrangements for Daniels's attendance at the 2nd World Congress of the Bernoulli Society for Mathematical Statistics and Probability and 53rd Annual Meeting of the Institute of Mathematical Statistics, Uppsala, Sweden, 13-18 August 1990. 1989-1990.

C.96, C.97 Contents of folder inscribed 'Uppsala paper Studentized mean Bootstrap bias'.

### Lectures and publications

- C.96                      Eleven transparencies titled 'Studentized mean' and also headed 'H.E.D and G.A. Young' on the first transparency.
- 1p manuscript notes.
- C.97                      10 transparencies titled 'Bootstrap bias with small data sets'.
- C.98, C.99                'Cornell 1990'
- Contents of folder so inscribed.
- C.98                      15 transparencies titled 'Classical bundle of fibres' + figures.
- C.99                      Typescript draft of paper on 'Percolation Breakdown Models' by S.L. Phoenix and R.L. Smith with covering note from Smith, 13 July 1990.
- 1p manuscript notes by Daniels.
- Off-print by Daniels, 1989.
- C.100-C.102              Barcelona 1991
- Contents of folder inscribed 'Anomalous SP transparencies'.
- C.100, C.101              Transparencies for talk by Daniels on 'Anomalous saddlepoint approximations', Barcelona, September 1991.
- C.100                      Title page and transparencies numbered 1-12.
- C.101                      Transparencies numbered I-IV.
- C.102                      Brief correspondence arising, 1991.
- C.103-C.106              Oberwolfach 1991



### Lectures and publications

- C.103-C.105 Contents of folder inscribed 'Nearly exact SP Transparencies'.
- C.103 Title page for talk on 'Nearly exact saddlepoint approximations' and transparencies numbered 1-13.
- C.104 Transparencies numbered 11-12, i-ii and tables 2-6.
- C.105 Duplicated manuscript notes titled ' "Nearly exact" S.P. approximations' and paginated 1-7.
- 1p duplicated manuscript notes.
- Manuscript notes paginated 1-[8].
- C.106 Duplicated manuscript notes titled 'Nearly exact saddlepoint approximations' paginated 1-13 + tables.
- C.107, C.108 Edmonton 1992
- Contents of folder inscribed 'Edmonton Slides Copies of paper Non-classical bundles'.
- C.107 Duplicated manuscript notes for talk by Daniels titled 'The distribution of breaking strength and extension of non-classical fibre bundles'.
- C.108 Transparencies: title page and numbered 3, 6, 7 and 7a.
- C.109 Cambridge 1993
- Contents of folder so inscribed 'Cambridge Epidemics 1993'.
- Transparencies for talk titled 'A perturbation approach to non-linear deterministic epidemic waves', January 1993: title page, sequence numbered 1-15 and figure.

### Lectures and publications

- C.110-C.112 'Turin 1993'  
Contents of folder so inscribed.  
A photocopy of Daniels and T.H.R. Skyrme's paper 'The maximum of a random walk whose mean path has a maximum' (*Adv Appl. Prob.* **17**, 1985) which was found with the transparencies has not been retained here.
- C.110 Transparencies numbered 1-4.  
First transparency is headed 'First crossing time to a parabolic boundary'.
- C.111 Transparencies numbered 5-9.
- C.112 Transparencies numbered 5-10 + references.
- C.113, C.114 Warwick 1993  
Contents of folder inscribed 'Warwick'.
- C.113 Duplicated manuscript notes for talk titled 'Local Brownian motion and the breaking strengths of bundles of fibres'.
- C.114 Transparencies: title page, sequence numbered 1-14, references etc.
- C.115-C.118 North Carolina 1994  
Contents of folder inscribed 'North Carolina June 1994'.
- C.115 Duplicated manuscript notes for paper titled 'An improved tangent approximation'.
- C.116 Duplicated manuscript notes for paper titled 'Approximating the first crossing time density for a curved boundary', Symposium on Future Directions in Robust Methods and Data Analysis, Princeton, June 1994.
- C.117, C.118 Transparencies.  
2 folders.

### Lectures and publications

- C.119, C.120 Oberwolfach 1994  
Contents of folder inscribed 'Oberwolfach 1994 Evolving deterministic epidemic'.
- C.119 Manuscript notes for paper titled 'The evolving deterministic simple spatial epidemic'. Paginated 1-[16] + references.
- C.120 Transparencies numbered 1-16 + references.
- C.121-C.126 Ascona 1995
- C.121-C.123 Contents of folder inscribed 'Ascona March 1995'.
- C.121 Correspondence *re* arrangements for workshop on new approximation techniques for statistical inference, Ascona, Switzerland, 20-24 March 1995. 1994-1995.
- C.122 Abstracts.
- C.123 Untitled manuscript notes attached by treasury tag.
- C.124-C.126 Contents of folder inscribed 'Ascona copies'.
- C.124 Duplicated manuscript notes for Ascona talk on 'Saddlepoint approximation - some historical remarks and a conjecture about "nearly exact" cases'. Title page, abstract, sequences paginated 1-10 and 1-2, tables.
- C.125 Transparencies: title page, abstract and sequence numbered 1-10.
- C.126 Transparencies: sequence numbered 1-2 and tables.
- C.127, C.128 Aarhus 1995  
Contents of folder inscribed 'Aarhus August 1995'.

### Lectures and publications

- C.127 Duplicated manuscript notes for Daniels' talk 'Approximating the first crossing time density for a curved boundary': title page, sequence paginated 1-13 and references.
- C.128 Transparencies: title page, sequence numbered 1-8.
- C.129, C.130 Bath 1995  
Contents of folder inscribed 'Alternative to SP approx Bath 1995', divided into two for ease of reference.  
Transparencies for talk titled 'An alternative to the saddlepoint approximation': title page, sequence numbered 1-20 and figures.
- C.131, C.132 Birmingham 1996
- C.131 Contents of folder inscribed 'Birmingham 1996'.  
Duplicated manuscript notes for talk titled 'Approximating the density of the first crossing time to a curved boundary': title page, sequence paginated 1-14 and references.  
1p untitled manuscript notes.
- C.132 Contents of folder inscribed 'B'ham talk on curved boundaries'.  
A second copy of the duplicated notes for Daniels' talk at Birmingham (see C.131 above) has not been retained with the papers.  
Variously paginated sequences of manuscript notes.
- C.133, C.134 Kingston 1996  
Contents of folder inscribed 'Permutation expansions (Kingston)'.
- C.133 Duplicated manuscript notes for talk on 'Permutation expansions' at Kingston [? Ontario, Canada], 1996.
- C.134 'Transparencies numbered 1-16.

### Lectures and publications

- C.135, C.136            Toronto 1996
- Contents of folder inscribed 'Approx f.c.d. (Toronto)', divided into two for ease of reference.
- Transparencies for talk on 'Approximating the density of the first crossing time to a curved boundary' at Toronto [Ontario, Canada], 1996: title page, sequence numbered 1-16, references and figure.
- C.137-C.139            Ascona 2000
- C.137                    Contents of folder inscribed 'Ascona'.
- Correspondence *re* arrangements, information etc for workshop on inference and asymptotics, Ascona, Switzerland, 9-14 July 2000. 1999.
- C.138, C.139            Contents of untitled folder.
- C.138                    1p manuscript abstract for talk on 'Studentization using the mean deviation' by 'H.E. Daniels (joint work with G.A. Young)'. Inscribed 'For meeting at Ascona' and 'Sent 13.04.00'.
- Manuscript notes for talk on 'Studentization using the mean absolute deviation' by Daniels and Young. Paginated 1-16 (two page 13s).
- Typescript draft 'Studentization using the mean absolute deviation' by Daniels and Young. Paginated 1-7.
- C.139                    Data and duplicated and printed background material.
- C.140-C.164            Undated
- Alphabetical sequence by folder title. The contents of an untitled folder are at the end of the sequence.
- C.140                    'Bootstrap'.
- Contents of folder so inscribed.
- Transparencies numbered 1-3.

### Lectures and publications

- C.141-C.143 'Bundles (Edinburgh)'.  
Contents of folder so inscribed.
- C.141, C.142 Contents of envelope (found in the folder) inscribed ' "Bundle" talks'.
- C.141 12pp duplicated manuscript notes (with manuscript annotations) + figure for talk titled 'Common type of maximum problem'. N.d.
- C.142 8pp duplicated manuscript notes (with manuscript annotations) headed on first page ' "Classical" bundle of n fibres'. N.d.
- C.143 Transparencies numbered 2-12 + figure. First transparency in the sequence headed ' "Classical" bundle of n fibres'.  
Transparency numbered '0' and headed 'Common type of maximum problem'.
- C.144 'Generalised Bundles Edinburgh'.  
Contents of folder so inscribed.  
Transparencies numbered 1-10. First transparency in the sequence headed 'Random walk'.
- C.145-C.149 'Local B.M. and Max. (Bundles)'.  
Contents of folder so inscribed.
- C.145 1p typescript ?abstract by Daniels titled 'The effect of variable fibre thickness on bundle strength'. N.d., latest bibliographical reference 1982.  
3pp typescript by Daniels titled 'The Distribution of Bundle Strength under General Assumptions'. N.d., latest bibliographical reference 1985.
- C.146 Duplicated manuscript notes for talk titled 'The maximum, and time to reach it, of a random walk whose mean path has a maximum (with an application to epidemics?)'. Inscribed 'Oxford Princeton' at the head of the first page. Paginated 1-10 + figures. N.d., latest bibliographical reference 1985.

### Lectures and publications

- C.147 Duplicated manuscript notes for talk titled 'Common type of maximum problem'. Paginated 1-12 + figures. N.d.
- C.148 Transparencies numbered 1-8.
- C.149 Transparencies numbered 1-13.
- C.150, C.151 'Max Ep'.  
Contents of folder so inscribed.
- C.150 Typescript draft of talk on 'The time of occurrence of the maximum of a closed epidemic', n.d., latest bibliographical reference 1989.
- C.151 Transparencies numbered 1-12 + figures.
- C.152-C.155 'RSS Buffet'.  
Contents of folder so inscribed.
- C.152 Abstract for talk on 'The first crossing time density for Brownian Motion with a perturbed linear boundary', n.d., latest bibliographical reference 1999.  
Figure.
- C.153 Manuscript notes titled 'First crossing time density for B.M. [Brownian Motion] to a curved boundary' paginated 1-7.
- C.154 Untitled variously paginated and unpaginated sequences of manuscript notes.  
Photocopy of undated letter from Daniels to 'Alastair'.
- C.155 Transparencies numbered 1-8.

### Lectures and publications

- C.156-C.158 'SP lectures + Tail Probs + Max'.  
Contents of folder so inscribed.
- C.156 Variously paginated duplicated manuscript notes on saddlepoint and other approximations.
- C.157 Manuscript notes for talks on saddlepoint and other approximations.
- C.158 Photocopies of papers by others.
- C.159-C.164 Contents of untitled folder.
- C.159 Untitled sequences of manuscript notes.
- C.160 Variously paginated duplicated manuscript notes attached with treasury tag. First page headed 'Exponential Family'. N.d. but refers to 'discussion of [D.R.] Cox 1988' at the head of the first page.
- C.161-C.164 Variously numbered sequences of transparencies.  
4 folders.
- C.165-C.181 PUBLICATIONS 1932-2000**
- C.165 Numbered list of 62 publications by Daniels covering the period 1932-1998.
- C.166-C.178 Off-prints etc of Daniels' publications, 1932-2000.
- C.166 1930s.
- C.167 1941-1944.



**Lectures and publications**

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C.169	1951-1952.
C.170	1954-1958.
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C.174	1969-1971.
C.175	1972-1974.
C.176	1975-1978.
C.177	1980-1989.
C.178	1990-2000.
C.179-C.181	Miscellaneous correspondence and papers <i>re</i> publications by Daniels and G.A. Barnard, 1965-2000.
C.179	'Bicycle Theory'. Contents of folder so inscribed.

### Lectures and publications

/...

Manuscript copy of letter from Daniels to 'Frank' enclosing 'reprint of an article published around 1960 in a student magazine, on a topic of mutual concern some thirty years ago. ... I hope this will ultimately be my most influential paper'. N.d. but paper used for copy of letter dated on verso 1982.

2pp typescript article titled 'How to ride a bicycle' by Daniels. The article is identified as 'From Khiva, University of Birmingham student magazine (ca. 1960)'.

Copy of the University of Birmingham Mathematical Society Magazine *The Möbius Strip*, May 1965.

Contents include 'How to ride a bicycle' by Daniels.

Photograph of Daniels with ?colleagues and bicycles.

1p photocopy from Cambridge University publication.

C.180

'G.A. Barnard'.

Contents of folder so inscribed.

Typescript drafts of papers by Barnard.

Letter from Barnard to Daniels, 17 August 1999.

C.181

'George Barnard'.

Contents of folder so inscribed.

Typescript draft of paper by Barnard.

Two letters from Barnard to Daniels, 30 March 2000 and n.d.

**SECTION D**

**CORRESPONDENCE**

**D.1-D.11**

With the exception of the contents of D.1, all the correspondence presented in this section was found in Daniels' folder inscribed 'Letters 1992, 1993' which contained correspondence 1992-1999 and n.d.

- |          |   |
|----------|---|
| D.1      | 1981.<br><br>Brief correspondence <i>re</i> Golden Jubilee celebrations of the Indian Statistical Institute, Calcutta, 1981.  |
| D.2-D.11 | Contents of folder inscribed 'Letters 1992, 1993': correspondence 1992-1999 and n.d.<br><br>The sequence is predominantly scientific in character and includes photocopies and manuscript drafts of Daniels' replies. |
| D.2      | 1992 January-June.  |
| D.3      | 1992 July-August.   |
| D.4      | 1993.   |
| D.5      | 1994 March-July.  |
| D.6      | 1994 September-December.<br><br>Includes manuscript draft by Daniels dated 1984 which may be a mistake for 1994.  |
| D.7      | 1995-1996.  |
| D.8      | 1997-1999.  |
| D.9      | N.d.  |

**Correspondence**

D.10, D.11           References and recommendations, 1992-1997.

Principally *re* papers and travel grants.

D.10                   1992-1994.

D.11                   1996-1997.

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