



THE
OPERATIONAL
RESEARCH
SOCIETY

Annual Report and Accounts

for the year ended 31st December 2016

The Operational Research Society
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Foreword from the President

I am delighted to introduce this report, describing the Operational Research Society's activities and achievements during 2016.

This is a privileged time to be president of the OR Society. During the last year I have visited a number of Regional Societies and university groups, attended conferences, workshops and SIGs, and talked to many members. The variety, importance and influence of the work being done under the banner of O.R. is striking and inspiring, and opportunities for meeting business and social needs through application and development of O.R. are burgeoning.

But it is also striking how many professionals are nervous about labelling the work that they do as "O.R." if it is multi-disciplinary or low-tech; how many users and potential users of O.R. have never heard of it; how much scope there is for further cross-fertilisation and learning for all of us, from each other. These are all areas where the Society can make a difference. We aim to boost visibility and awareness; facilitate knowledge exchange and networking both within the O.R. 'family' and across the neighbouring disciplines; attract people into the profession, and help support their professional competence and development when they're in.

This report describes some of the Society's key activities in addressing these issues: building the reach of our activities and services, extending the visibility of O.R., supporting community engagement, nurturing OR research and helping build O.R. capacity. This work has been achieved through committed and dedicated staff, a great many volunteers, and in many cases the support of those volunteers' employers in industry, government and academia. Without their contribution, the Society simply could not function, and I would like to say thank you to every one of them.

It is impossible to talk of 2016 without noting the fall-out from the EU referendum. Whatever one's view on the specific question of EU membership (and our own members include people from both sides of the debate), there have been two very unwelcome developments for the O.R. community. The first is the undermining of international co-operation. This has consequences for the effectiveness of O.R: especially of course our integration with European O.R. visible in our workplaces, our funding, and our publications. Perhaps worse, it also hurts the lives of many people who do O.R., especially when coupled with the well-documented rise in hate crime and xenophobia. And the second is the disrespect for evidence-based, reasonable, *thoughtful* decision-making.

Where the opportunity has arisen, the OR Society has spoken up on these explicitly, and we will need to continue to do so. But even when not speaking, we have continued and will continue to behave in line with the values that underpin effective O.R: rationality, respect, reflection, and willingness to work across boundaries of every kind.

2017 will no doubt be challenging in many ways. However it also brings the OR Society many opportunities to build on its current services and products. The Society is in a good financial position, and we plan to make the most of this to continue to promote the strength and impact of O.R.

Ruth Kaufman OBE, FORS, FIMA
OR Society President 2016-2017

Introduction

The Operational Research Society is a charity set up to advance knowledge, interest and education in Operational Research (O.R.). Our vision is of a world improved by rigorous analysis and better, evidence-based, decision-making: "O.R. providing world class analysis for world class decisions". In this world O.R. would be seen as indispensable - not just a "nice to have" but a "must have" - and be used and acknowledged widely in all areas of industry, business, government and the 3rd sector.

To fulfil its mission and work towards its vision, the Society's aims are that:

- decision makers understand how O.R. can help, value and seek its contribution, and know from whom they can get it; and
- operational researchers are knowledgeable and well-trained, and in good supply.

In support of this the Society also aims to:

- have a vibrant and active membership drawn from diverse areas; and
- be well-run, provide excellent services and be adequately and sustainably resourced.

As noted in last year's report, these are exciting times for Operational Research, as data and technical developments open up new methodological and application opportunities, and the complexity and speed of modern decision-making generates continuing need and demand. Equally, there are many challenges – the need to maintain and grow visibility of the profession, the growing shortage of people to practise O.R., the need for sustainable and reliable funding sources.

Review of the Year 2016

2016 was a year in which we built on the groundwork of previous years, and laid the groundwork for future years, in pursuing five main priorities: building the reach of the OR Society, so that our products and services reach a wider audience; building the visibility of O.R., the holy grail of O.R. professionals for many years; strengthening the community, fostering activity and interaction amongst O.R. professionals; nurturing research; and building O.R. capacity ('the people pipeline').

Highlights of the Year

We established a Research Panel: a group of leading O.R. researchers from a cross-section of institutions, methodological areas, and career points. The panel, chaired by Professor Kevin Glazebrook, aims to raise the visibility and effectiveness of O.R. research, so as to increase the success of O.R. research in getting funding, the connectedness of O.R. research across O.R. and associated communities, and the impact of O.R. research on practice.

We moved towards giving our members a wider variety of options for accreditation, by gaining a licence from the Science Council to offer Chartered Scientist to our members, and entering into negotiations with INFORMS, our US counterpart, to offer their Certified Analytics Professional qualification to our members (with the intention of launching CAP for OR Society members during 2017). Our aim in offering these is not just to provide a member benefit (though we hope that both members and potential members will see it as such) but also to help support professional development, encourage people without specific O.R. qualifications to recognise themselves as part of the O.R. community, and provide another route for promoting O.R. and its value.

A fresh approach to marketing and communications brought re-branding, increased use of video including videos of events, interviews, our work with Pro Bono, and plans for a new series of animated videos giving more information about O.R., the first of which 'The Origin of O.R.' was launched early in 2017.

Other Achievements during the year

Analytics / Data Science

Activities to support our long-running objective of being visible, connected and active in the world of analytics and data science included:

- running our fifth one day analytics event (The Annual Analytics Summit – TAAS 2015), once again jointly branded with and promoted by the Royal Statistical Society (RSS). A new format, mixing presentations and workshops, was warmly received, and attendance was the highest ever; and
- exploring possible future work with the newly-established Alan Turing Institute (ATI). Two of the ATI's founding fellows are from the O.R. world (Raphael Hauser and Peter Richtarik), and we were delighted that the Blackett Lecture was delivered this year by Andrew Blake, its Director. It is an indication of the level of interest in the subject that a record number attended.

Publications

The OR Society's new Impact magazine had a strong second year, building its circulation and generating considerable interest in its mix of case studies, spotlights on O.R. practitioner groups, and other items demonstrating the breadth of O.R. in practice.

In addition to this and our monthly members-only newsletter Inside O.R., the Society publishes (currently) five academic journals. These document and disseminate a broad range of O.R. work (predominantly research, but also including practical applications), from authors worldwide and to an international audience. Not only are they crucial to the world of research, cementing the Society's reputation internationally, but they also provide much of the income that enables the Society to continue to promote and develop the profession (as can be seen in the Finance section and the accounts).

All journals continued to publish on time, and to planned page budgets, throughout the year.

To build on this portfolio and to support our link with Analytics, plans were made for a new Journal of Business Analytics. At the time of publishing this annual report, an editorial team is in place and we hope to launch the Journal in the near future.

Our thanks go to the Society's office staff, to Palgrave/Springer, and most especially to our editors and peer reviewers, for their endeavours throughout the year.

Conferences and Events

As well as the events referred to above, we ran a successful programme of conferences and events, designed to meet the needs of the O.R. community and to develop increased awareness of the range of O.R. techniques and skills required by both academics and practitioners. These included:

- our Annual Conference, at Portsmouth University, which attracted over 300 delegates from the UK and overseas. We were pleased that the attendance mix was around 50:50 academic and practitioner, and the papers from both communities had a distinctly applied flavour to them. As well as scientific papers, the conference again included a 'Making an Impact' day focusing on practice, and the innovation from EURO2015 of a 'Grand Challenges' session, bringing in local leaders to workshop with participants on potential future O.R. work. This session has resulted in a number of

subsequent consultancy, research and Pro Bono projects, and hopefully sets a pattern for ensuring a local legacy from the conference. We are very grateful to our hosts at Portsmouth, the conference committee, stream leaders and organisers, and our events coordinator Hilary Wilkes, for making the conference such a success;

- a two-day Simulation Workshop, which attracted over 80 delegates. Again, thanks are due to a dedicated conference committee which ensured a varied and rewarding programme;
- the Beale Lecture, presented by the 2014 Beale Medallist Robert Fildes, accompanied by a presentation from the 2013 Doctoral Award winner Tom Lidbetter. Unfortunately Birmingham proved to be an unpopular venue; though for those who came, the lectures were thought-provoking and well worth listening to, and for those who didn't attend, they are available on video;
- our annual Careers Open Day, attended by 20 exhibitors and 140 students.

A number of Regional and Special Interest Group meetings were held during the year. It was particularly satisfying to see the relaunch of the North West Regional Society in February. For the first time, the ORS organised an event for Regional and SIG committee members to come together to compare notes and help generate ideas for building up activity levels.

Training

Demand for our Birmingham-based high quality training programme, and our newly-established London-based courses held in collaboration with the Government Operational Research Service (GORS), remained at the higher levels generated last year. A total of 27 courses ran, with 253 delegates in total, and an average approval rating of 8.8 (out of 10).

O.R. in Schools (ORiS)

The ORiS initiative continued to disseminate materials on O.R. concepts and careers to secondary schools via a variety of means including school visits by Society volunteers. Unfortunately, progress was limited during the second half of the year, owing to the long-term sickness of a key member of staff. We hope to restore activity during 2017.

Pro Bono O.R.

The Pro Bono O.R. scheme continued to provide a showcase for O.R. and its benefits, as well as providing opportunities for members to engage in exciting and novel work, and for our profession to make a positive difference to a wide variety of charities and their beneficiaries. A total of 38 projects were initiated during the year, 157 volunteer-days were spent, and feedback continued to be very positive from both clients and volunteers. This was accompanied by publicity not only from the OR Society, but from a number of voluntary sector influencers and support organisations.

Pro Bono also provides an opportunity for us to work with other professional bodies: we cross-refer to Datakind and the government statistical service, both of whom offer pro bono schemes, and we are signposted by the Royal Statistical Society which does not offer its own scheme. In 2016, we have been very pleased to see the launch of the US INFORMS' scheme, based on ours, and to support the Portuguese O.R. Society in planning its own service.

Other items

We commissioned an external review of Board effectiveness, to help us benchmark the quality of our governance compared with other charities and with our own aspirations; and a programme of work has been initiated as a result, to help ensure that the Board can achieve as much as possible with the limited time and resource available.

An in-depth survey of members and lapsed members was completed towards the end of the year, and is providing the necessary information to help with our member recruitment and retention strategies, which are essential for building our reach.

Work has begun on a new website, aiming to provide a better user experience (especially for people using mobiles) and more efficient links to our back-office systems; and on a variety of other initiatives aimed at achieving our strategic priorities more effectively.

As part of our initiative to address issues around diversity and inclusion, all staff and Board members have undertaken unconscious bias training, and this will be extended over time to all volunteers working for the Society. All Board subcommittees now have consideration of diversity and inclusion incorporated into their Terms of Reference.

Members, Affiliates and Fellows

At the end of the year, the OR Society had 2,927 members. The Analytics Network boasted approximately 1,500 members, the Society's LinkedIn group had 4,248 members, and we had 2,555 Twitter followers. In addition, there were six corporate partners – CORDA (part of BAe Systems), Royal Bank of Scotland, Ministry of Justice, Home Office, AWE and NATS – representing 230 affiliates (included in the total numbers).

There were 352 accreditees, comprising 145 Fellows, 82 Associate Fellows, 68 Associates and 57 Candidate Associates.

Awards

- **Goodeve Medal** (awarded for best paper published in JORS in 2015): Awarded to Sally Brailsford and Dileep De Silva "How many dentists does Sri Lanka need?", *Journal of the Operational Research Society* (2015) 66, 1566–1577.
- **Stafford Beer Medal** (awarded for best paper published in EJIS in 2015): Awarded to Jennifer Gerow, Jason Thatcher and Varum Grover "Six types of IT-business strategic alignment: An investigation of the constructs and their measurement", *European Journal of Information Systems*, 24 465-491.
- **Cook Medal** (awarded for best paper published in KMRP in 2014/2015): Awarded to Duncan Pentland, Kirsty Forsyth, Donald MacIver, Mike Walsh, Richard Murray and Linda Irvine "Enabling integrated knowledge acquisition and management in health care teams", *Knowledge Management Research and Practice*, 12 362-374.
- **Doctoral Award** (awarded for the most distinguished body of research leading to the award of a doctorate in the field of O.R. in 2015): Awarded to Cagri Koc, University of Southampton.
- **President's Medal** (awarded for the best practical application of O.R.): Awarded to Gilbert Owusu, Sid Shakya, Raphael Dorne, Ahmed Mohamed, Ali McCormick, Anne Liret (all British Telecom) for "Leveraging OR Techniques for a Smarter Field Operations".
- **Beale Medal** (awarded for a sustained contribution to the theory, practice, or philosophy of O.R.): Awarded to Richard Ormerod.
- **Companionship of O.R.** (awarded for sustained support and encouragement for the development of Operational Research or for those in influential positions who are in broad sympathy with the subject area): Awarded to Sally Brailsford and Jeff Griffiths.

Structure of the Funds

The Society's funds are unrestricted but are organised into:

- the General Fund, through which the ongoing operations of the Society are conducted;
- the Reserve Fund, comprising the Seymour House property together with investments and cash on deposit to cover potential risks of a general nature, the most significant of which would arise if the Society were forced to move quickly to a financial regime in which its publications income was significantly reduced; and
- the Designated Award Fund which represents a bequest received from Mrs May Hicks in 2002 and which is used for purposes consistent with her wishes, by providing awards for the best student O.R. projects undertaken for a client organisation.

Review of Operations

The Society's operational income and expenditure account showed a surplus of nearly £84k during the year, on a turnover of nearly £1.3m. This compares with a surplus of £89k in 2015. The favourable 2016 outturn was significantly ahead of budget as a result of increased income or reduced expenditure in a number of areas. The first of these was training, where, for the second year in a row, a healthy surplus (£13k) was recorded; training activity continues at a high level, primarily due to the Foundation courses arranged for the Government OR Service. Publications income outstripped its forecasts, partly as a result of unexpected back catalogue sales.

Most operations to support the charitable aims of the Society - such as conferences, special events, regional societies, special interest groups, education, publicity and outreach initiatives, the monthly Inside OR magazine and special charitable projects - result in deficits to the Society. To support them the Society relies primarily on subscriptions and income from its academic journals - particularly the latter which in 2016 contributed over £700k net of all associated costs. This serves as a reminder of the Society's current financial dependence on the academic publication system; see the section on 'Risk' below.

At year end, the Society employed 14 members of staff (12.15 full-time-equivalents).

Assets, Reserves and Investments

The total net assets of the Society increased from £2.35m to £2.6m over the year, with the surplus on income and expenditure being boosted by a net £135k capital gain (realised and unrealised) on our investment fund. This gain reflects the perhaps surprisingly positive movements in stock markets during the year, despite the general political turmoil.

It is important that the Society maintains an appropriate level of reserves in relation to perceived financial risks. During the year the Board reviewed and revised the Society's reserves policy. In setting its reserve policy, the Board distinguished between the funds held in the General Fund, which arise from the normal operating activities of the Society, and the Reserve Fund held to ensure that the Society can continue long-term operations in the event of financial risks materialising.

The policy now identifies minimum and maximum levels for the reserves held in the Reserve Fund, an approach that provides a more flexible and realistic basis for financial planning than a single figure. Where in the range bounded by these levels the reserves should be sized at any given time is a matter for Board judgement, depending on factors such as planned or potential future calls on resources outside the normal pattern of income and expenditure. Advice from the Society's investment managers will also be taken into account, since, for example, if reserves have increased sharply because of buoyant market conditions, then it

might be appropriate to maintain them at a higher level in order to mitigate the impact of any subsequent correction.

The Board has set the minimum level of reserves at one year's normal gross income arising from the Society's research journals plus 50% of normal annual General Fund income from other sources. The maximum level adds a further 50% of annual gross research journal income. This approach reflects the critical dependence of the Society on its journal income.

In calculating the minimum and maximum target reserves level for 2017, the 'normal journal income' has been taken as the 2016 journal income, and the 'normal General Fund income' has been taken as the 2016 General Fund income. This gives a minimum reserve level of £1.03m and a maximum of £1.44m. At 31st December 2016, the Society's reserves - its investments and cash held within the Reserve Fund - amounted to £1.443m. The reserves are therefore just above their prescribed maximum. The Board will bear this in mind when considering opportunities for spending on worthwhile one-off projects that further the Society's objectives.

The Society's investments and their performance are kept under review by the Investment Committee in accordance with policies decided by the Board. The Committee is chaired by the Treasurer and, in addition to other members of the Society, includes representatives from the Society's investment managers.

Risk

The Society's dependency on journal income is the most significant material risk. Developments, both in the UK and abroad, that mandate 'open access' publishing for publicly funded work pose the greatest potential threat to this income stream, although the current perception is that any adverse financial impact will manifest itself over a fairly long timescale. The risk of a temporary interruption in the income stream owing to administrative or commercial problems affecting the publication and revenue-capture process is also recognised and, as described above, is a strong influence on decisions about the appropriate level of the Society's reserves.

A key strategic risk is that O.R. is not seen as relevant in the rapidly changing environment, as big data and increasing computing power drive technical developments, and as new discipline descriptions compete for attention and funding. We have been addressing this through a number of initiatives led by our Analytics Development Group, and are also actively promoting the relevance of O.R. to Data Science, Robotics and Artificial Intelligence as well as other overlapping fields. More generally, we aim to raise the visibility of OR, and support outward-looking practice and membership, through outreach to other professional societies and to organisations and businesses who may benefit from what O.R. has to bring, and through the variety of topics and speakers at our events.

A further key risk is that the OR Society is not seen as relevant to OR professionals. We have been addressing this through the whole range of activities addressing our strategic goals, and described elsewhere in this Report.

The Board regularly reviews the risk register covering a wide range of operational risks, including IT risks, and where feasible puts mitigating action in place.

Key Management Personnel

The Key Management Personnel for the Society comprise the trustees (its Board of Directors) and the Secretary & General Manager. No remuneration is payable to trustees for service on the Board. Remuneration for the Secretary & General Manager and the rest of the Society's staff is recommended by the Treasurer after consultation with the Finance Committee, and approved by Board.

Basis for Remuneration

The Society's Finance committee has responsibility for maintaining and implementing the remuneration policy with all decisions being ratified by Board. Decisions on any annual increase applied to staff salaries take into account a range of factors. Price inflation, measured primarily by the Consumer Prices Index, is a key factor, but national and regional statistics on movements in average earnings, together with the specific market rates for roles similar to those undertaken in the office are also considered. The financial situation of the Society is another important factor. The Finance committee also consider individual cases for promotion within the pay scales for each role.

Voluntary Contributions

The Society's work in 2016 benefited from voluntary contributions of time, from members and others, through these principal lines of work: refereeing of journal papers; editing of journals; conference organisation; authorship and delivery of talks to regional societies and special interest groups; organisation of regional societies and special interest groups; the work of the Society's officers; contributions to the administration of the Society, its Awards and its accreditations through service on Board and the Society's committees.

In addition to this, more than two hundred members have volunteered, or offered to volunteer, with our two main outreach projects, O.R. in Schools and Pro Bono O.R. Their work benefits the O.R. community, the future development of the profession, and the wider society, and is a fine contribution to the OR Society's charitable objectives.

It is estimated that a total of 5,000 person-days were contributed in 2016. If this time is valued at £500 per day, its value is £2.5M. The Society is most grateful to all who contributed voluntary effort, without which the Society could not accomplish its goals.

Objectives for 2017

Our objectives for the next three years are the same as for 2016: to build the Society's **reach** (the number of people aware of or benefiting from the Society's activities), the **visibility** of O.R. itself, and the **engagement** of O.R. people in the profession and wider community; to help develop the **people pipeline**, and to nurture O.R. **research**.

Work has already started on many of the initiatives that we hope will come to fruition in the next year or so:

- offering INFORMS' Certified Analytics Professional qualification at the lower member rates, to OR Society members. We expect this to support members' continuing professional development, and to bolster the role of O.R. in the analytics field;
- piloting the offer of MSc scholarships, to help encourage UK students to consider qualifications that will lead to an O.R. career, and to raise the visibility of both the qualifications and the careers;
- preparing a suite of materials providing an accessible guide to O.R. methodology;
- launching a Journal of Business Analytics;
- launching a redesigned website, which will have a better user experience and will improve our ability to develop web-based services;
- finalising and implementing new training, member-retention, communications and marketing strategies;
- developing a plan to support the O.R. 'people pipeline', following an external review of the supply chain;
- developing a national database of academic communities related to O.R.;
- taking actions to foster the development of research capabilities in O.R. communities.

These developments will be on top of our existing broad sweep of services: conferences, events, lectures, and training; publications; Pro Bono O.R. and O.R. in Schools; representing the OR Society on bodies including The Council for Mathematical Sciences, the Science Council, EURO and IFORS; and our more inward-looking activities to improve sustainability, efficiency and effectiveness.

For a relatively small professional body in an uncertain world, there are many challenges to overcome. By undertaking these activities we aim not just to meet the challenges, but to grow the profession, and the OR Society's contribution, and make the most of the opportunities awaiting us.

Accounts

for the year ended 31st December 2016

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE OPERATIONAL RESEARCH SOCIETY

We have audited the financial statements of The Operational Research Society for the year ended 31st December 2016 which comprise the Statement of Financial Activities, the Balance Sheet, the Statement of Cash Flows and the related notes. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice) FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland".

Respective responsibilities of trustees and auditor

As explained more fully in the Trustees' Responsibilities Statement set out on page 29, the trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors. This report is made solely to the charity's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the charity's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charity and the charity's members as a body for our audit work, for this report, or for the opinions we have formed.

Scope of the audit of the financial statements

A description of the scope of an audit of financial statements is provided on the Financial Reporting Council's web-site at www.frc.org.uk/auditscopeukprivate.

Opinion on the financial statements

In our opinion the financial statements:

- give a true and fair view of the state of the charity's affairs as at 31st December 2016 and of its result for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice applicable to smaller entities; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Opinion on the other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Trustees' Report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Trustees' Report has been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the Trustees' Report.

We have nothing to report in respect of the following matters where the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been

- received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
 - certain disclosures of trustees' remuneration specified by law are not made; or
 - we have not received all the information and explanations we require for our audit; or
 - the trustees were not entitled to take advantage of the small companies' exemption in preparing the Trustees' report and take advantage of the small companies exemption from the requirement to prepare a Strategic report.

Ian Holder FCA (Senior Statutory Auditor)
for and on behalf of Mazars LLP
Chartered Accountants and Statutory Auditor
45 Church Street
Birmingham B3 2RT

OPERATIONAL RESEARCH SOCIETY

STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 31 DECEMBER 2016

	-----Unrestricted Funds-----			<u>2016</u>	<u>2015</u>		
			Designated	£	£		
	General	Reserve	Award	Total	Total		
<u>Note</u>	<u>Fund</u>	<u>Fund</u>	<u>Fund</u>	<u>Funds</u>	<u>Funds</u>		
INCOME FROM :							
Charitable activities :							
	Subscriptions	144,544	-	-	144,544	138,722	
	Events and Conferences	167,650	-	-	167,650	798,164	
	Training	112,394	-	-	112,394	125,957	
3	Publications	820,218	-	-	820,218	740,833	
	Accreditation	8,357	-	-	8,357	7,437	
	Websites / Digital Services	4,624	-	-	4,624	6,830	
		1,257,787	-	-	1,257,787	1,817,943	
	Investment Income	7	22	43,814	2,276	46,112	46,712
	Total Income		1,257,809	43,814	2,276	1,303,899	1,864,655
EXPENDITURE ON :							
Raising Funds							
	Investment Management Costs	-	10,169	-	10,169	9,692	
Direct charitable expenditure :							
	Subscriptions	100,400	949	-	101,349	89,452	
	Events and Conferences	222,970	679	-	223,649	838,865	
	Training	99,220	214	-	99,434	111,204	
3	Publications	241,677	917	-	242,594	232,678	
	Accreditation	4,099	31	-	4,130	5,240	
	Websites / Digital Services	127,168	1,112	-	128,280	128,770	
4	Other Charitable Expenditure	277,435	1,787	1,500	280,722	246,933	
5	Governance and Support Costs	101,274	2,582	-	103,856	85,255	
		1,174,243	8,271	1,500	1,184,014	1,738,397	
	Total Expenditure	6	1,174,243	18,440	1,500	1,194,183	1,748,089
	Net gains/(losses) on Investments	18	-	133,677	1,539	135,216	(16,679)
NET INCOME/(EXPENDITURE) and NET MOVEMENT IN FUNDS FOR THE YEAR							
			83,566	159,051	2,315	244,932	99,887
Reconciliation of funds :							
	Total funds brought forward	843,028	1,453,441	55,379	2,351,848	2,251,961	
	Total funds carried forward		926,594	1,612,492	57,694	2,596,780	2,351,848

The notes on pages 4 to 12 form part of these accounts.

The statement of financial activities includes all gains and losses recognised in the year. All income and expenditure derive from continuing activities.

OPERATIONAL RESEARCH SOCIETY
 (A company limited by guarantee. No. 663819)

BALANCE SHEET - 31 DECEMBER 2016

	<u>Note</u>	<u>2016</u> £	<u>2015</u> £
FIXED ASSETS			
Fixed Assets : Tangible	8	198,078	188,022
Intangible	8	17,263	43,592
Investments :			
Listed at Market Value	9	1,416,429	1,221,016
Cash Deposited with Investment Brokers		29,019	58,851
Charities Aid Foundation	10	67,899	64,084
		<u>1,728,688</u>	<u>1,575,565</u>
CURRENT ASSETS			
Debtors	11	877,970	786,581
Cash at Bank and In Hand		110,559	239,880
		<u>988,529</u>	<u>1,026,461</u>
CREDITORS (amounts falling due within one year)	12	120,437	250,178
NET CURRENT ASSETS		<u>868,092</u>	<u>776,283</u>
TOTAL ASSETS LESS CURRENT LIABILITIES		<u>2,596,780</u>	<u>2,351,848</u>
FUNDS			
General Fund		926,594	843,028
Reserve Fund	15(1)	1,612,492	1,453,441
Designated Award Fund	15(2)	57,694	55,379
TOTAL FUNDS		<u>2,596,780</u>	<u>2,351,848</u>

These financial statements have been prepared in accordance with the special provisions relating to companies subject to the small companies regime within Part 15 of the Companies Act 2006.

J. E. WILLIAMS
 Honorary Treasurer

R. A. KAUFMAN
 President

The notes on pages 16 to 24 form part of these accounts.

OPERATIONAL RESEARCH SOCIETY

STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31 DECEMBER 2016

	<u>2016</u> £	<u>2015</u> £
Reconciliation of net incoming resources to net cashflow from operating activities :		
Net Movement in Funds	244,932	99,887
Depreciation Charge - Tangible Assets	16,644	16,210
Depreciation Charge - Intangible Assets	29,814	40,740
Loss on Disposal of Fixed Assets	4,197	-
(Increase)/Decrease in Debtors	(91,389)	(25,145)
(Decrease)/Increase in Creditors	(129,741)	141,768
(Gains)/Losses on Investments	(135,216)	16,679
Investment Income	(46,112)	(46,712)
Cash Flows from Operating Activities	<u>(106,871)</u>	<u>243,427</u>
Investment Income	43,836	44,881
Purchase of Tangible Assets	(30,897)	(5,106)
Purchase of Intangible Assets	(3,485)	(7,000)
Purchase of Investments	(225,040)	(422,376)
Proceeds on Disposal of Investments	163,304	439,134
Cash Flows from Investing Activities	<u>(52,282)</u>	<u>49,533</u>
Increase/(Decrease) in Cash and Cash Equivalents in the Year	(159,153)	292,960
Cash and Cash Equivalents at the Beginning of the year	298,731	5,771
	<hr/>	<hr/>
Cash and Cash Equivalents at the End of the year	<u>139,578</u>	<u>298,731</u>

1 ACCOUNTING POLICIES

(1) Basis of preparation

The accounts have been prepared in accordance with the Companies Act 2006, the Charities Act 2011, the Charities Statement of Recommended Practice (FRS 102), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and under the historical cost convention in accordance with applicable Accounting Standards as modified by the accounting policy for investments quoted on a recognised stock exchange, which are stated at market value (see 1(6) below).

The Operational Research Society meets the definition of a public benefit society under FRS 102.

(2) Preparation of the accounts on a going concern basis

The Operational Research Society operates as a going concern and the trustees are of the view that it will continue to do so for the foreseeable future.

(3) Key estimates and judgements

When preparing the financial statements, management makes a number of judgements, estimates and assumptions about the recognition and measurement of assets, liabilities, income and expenses. The estimate that has the most significant effect relates to intangible fixed assets. The company amortises fixed assets over their estimated useful lives. The estimation of the useful lives of assets is based on historic performance as well as expectations about future use and therefore requires estimates and assumptions to be applied by management. The actual lives of these assets can vary depending on a number of factors, including the maintenance and level of upkeep of the software systems.

(4) Designation of funds

Income and expenditure arising from the normal charitable activities of the Society is included within the General Fund.

The Reserve Fund consists of resources of the Society which are represented by land and buildings, fixed asset investments and cash deposited with the Society's investment brokers. The Designated Award Fund represents a legacy received in 2002 which will be used to fund an annual award.

The Society operates a reserves policy that reflects its critical dependence on journal income. The policy sets the minimum level of reserves at one year's gross income arising from its research journals plus 50% of annual General Fund income from other sources. The maximum level is set at the minimum level plus a further 50% of annual gross research journal

(5) Dividends and investment income

Dividends and investment income are recognised when receivable.

(6) Other income and expenditure

Income and expenditure other than dividends are accounted for on an accruals basis.

(7) Value added tax

The Society has partial exemption status for Value Added Tax and Value Added Tax on apportionable costs which cannot be reclaimed is disclosed separately within administration costs. This item was £nil in 2016.(2015 - £nil).

(8) Investments

Investments quoted on a recognised stock exchange are included in the accounts at their market value.

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016

1 ACCOUNTING POLICIES (continued)

(9) **Tangible and Intangible fixed assets**

Tangible and intangible fixed assets costing more than £1,000 and with a useful economic life in excess of 3 years are capitalised and included at cost including any incidental expenses of acquisition.

Depreciation of tangible fixed assets is charged on a straight line basis at the following rates :

Long leasehold building	-	2%
Office machines and computer equipment	-	25%
Fixtures and fittings	-	10%

Amortisation of Intangible fixed assets is charged on a straight line basis at the following rate :

Software systems	-	25%
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The amortisation rate charged is based on management's best estimate of the useful life of the software systems.

(10) **Debtors**

Trade and other debtors are recognised at the settlement amount due after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due.

(11) **Cash at bank and in hand**

Cash at bank and cash in hand includes cash and short term highly liquid investments.

(12) **Creditors and provisions**

Creditors and provisions are recognised where the charity has a present obligation resulting from a past event that will result in the transfer of funds to a third party and the amount due to settle the obligation can be measured or estimated reliably. Creditors and provisions are normally recognised at their settlement amount after allowing for any trade discounts due.

(13) **Pensions**

The Society contributes to individual pension schemes established for each eligible employee.

(14) **Allocation of costs**

Salaries, depreciation, websites / digital services expenditure and other central and establishment overheads are allocated to appropriate cost categories using consistently applied ratios based on estimates of actual time and costs expended in each area.

(15) **Financial instruments**

The Society only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are initially recognised at transaction value and subsequently measured at their settlement value.

2 LEGAL STATUS OF THE SOCIETY

The Society is a company limited by guarantee, has no share capital and is a registered charity. The objectives of the Society are the advancement of knowledge and education in operational research.

The liability of each member in the event of a winding-up is limited to £1.

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016 (continued)

3 PUBLICATIONS	<u>2016</u>	<u>2015</u>
	£	£
Incoming resources :		
Journal / KMRP / JOS	610,988	510,086
Inside OR	4,233	9,567
EJIS / Health Systems	203,757	219,984
Other Publications	<u>1,240</u>	<u>1,196</u>
	<u><u>820,218</u></u>	<u><u>740,833</u></u>
Resources used :		
Journal / KMRP / JOS	67,633	62,873
Inside OR	105,859	105,719
EJIS / Health Systems	42,372	39,741
Impact Magazine	23,657	21,443
Other Publications	<u>3,073</u>	<u>2,902</u>
	<u><u>242,594</u></u>	<u><u>232,678</u></u>
 4 OTHER DIRECT CHARITABLE EXPENDITURE		
Charitable projects		
On-line Synchronous Teaching	<u>0</u>	<u>3,500</u>
Non-revenue earning activities in pursuit of charitable aims		
IAOR Online - Members access	8,427	6,600
Library	5,000	5,000
Foreign Affairs Expenses	3,119	3,036
Regional Societies	4,235	3,577
Special Interest Groups	3,936	2,998
Public Information about OR :		
Science of Better	17,494	17,255
Learn about OR	58,015	58,432
General Publicity	48,016	43,261
Third Sector Pro Bono	33,342	25,023
Sponsorship of OR Conferences	5,000	-
Medals, Awards and Scholarships	6,411	7,538
Strategic Initiatives	87,727	70,713
Other Costs	-	-
	<u>280,722</u>	<u>243,433</u>
 Total	<u><u>280,722</u></u>	<u><u>246,933</u></u>
 5 GOVERNANCE AND SUPPORT COSTS		
Board and Committees	77,184	69,438
Auditors' Fees :		
for audit	8,400	6,375
for other services	1,835	1,150
Other Legal and Professional Fees	16,437	8,292
	<u>103,856</u>	<u>85,255</u>

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016 (continued)

6 TOTAL RESOURCES EXPENDED

Expenditure analysed by type of cost :

	<u>Staff Costs</u>	<u>Other Costs</u>	<u>Depreciation</u>	<u>Total</u>	<u>Total</u>
	£	£	£	2016	2015
	£	£	£	£	£
Investment Management Costs	-	10,169	-	10,169	9,692
Subscriptions	77,270	21,786	2,293	101,349	89,452
Events and Conferences	54,754	167,171	1,724	223,649	838,865
Training	17,910	80,992	532	99,434	111,204
Publications	74,712	165,666	2,216	242,594	232,678
Accreditation	2,559	624	947	4,130	5,240
Websites	90,575	12,268	25,437	128,280	128,770
Other Charitable Expenditure	145,328	124,987	10,407	280,722	246,933
Governance and Support Costs	48,614	53,799	1,443	103,856	85,255
	<u>511,722</u>	<u>637,462</u>	<u>44,999</u>	<u>1,194,183</u>	<u>1,748,089</u>

Staff costs :

Wages and Salaries	424,309	381,479
Social Security Costs	42,049	37,591
Pension Costs	45,364	40,875
	<u>511,722</u>	<u>459,945</u>

The average number of employees of the Society, calculated on a full time equivalent basis, during the year was :

	<u>2016</u>		<u>2015</u>	
	FTE	Headcount	FTE	Headcount
Charitable activities	9.3	10.0	8.5	9.6
Management and administration	2.9	4.0	2.7	3.0
	<u>12.2</u>	<u>14.0</u>	<u>11.2</u>	<u>12.6</u>

During this and the previous year one employee of the Society earned between £70,000 and £80,000, excluding pension contributions. Contributions of £8,266 were paid to their pension scheme (2015 - £8,214).

The key management personnel of the Society comprise the trustees and the Secretary and General Manager. The total employee benefits of the key management personnel of the Society were £84,575 (2015 - £84,100)

No remuneration was paid or is payable to Trustees for service on the Board for the year (2015 - £Nil)

During the year 10 Trustees (2015 - 10 Trustees) received a total of £4,631 (2015 - £6,724) in reimbursement of expenses incurred on Society business . Prof S L Robinson received £5,160 (2015 - £3,803) , Dr F O'Brien £4,992 (2015 - £4,754) and Dr M Kunc £3,000 (2015 £826) for the supply of training courses to the Society during the year.

Other external costs include :	<u>2016</u>	<u>2015</u>
	£	£
Other Operating Leases	<u>4,197</u>	<u>5,159</u>

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016 (continued)

7 INTEREST RECEIVABLE AND SIMILAR INCOME

	<u>2016</u> £	<u>2015</u> £
Income from Listed Investments	43,684	44,772
Interest on Bank Deposits	152	109
Distributions - CAF	2,276	1,831
	<u>46,112</u>	<u>46,712</u>

8 FIXED ASSETS

	-----Tangible-----				Intangible
	Long Leasehold Land and Buildings £	Office Equipment £	Fixtures & Fittings £	Total £	Software Systems £
Cost					Cost
At 31 December 2015	314,306	115,355	42,297	471,958	747,775
Additions	-	14,682	16,215	30,897	3,485
Disposals	-	(22,475)	(7,723)	(30,198)	-
At 31 December 2016	<u>314,306</u>	<u>107,562</u>	<u>50,789</u>	<u>472,657</u>	<u>751,260</u>
Depreciation					Amortisation
At 31 December 2015	138,292	103,520	42,124	283,936	704,183
Charge for the Year	6,286	8,596	1,762	16,644	29,814
Disposals	-	(18,290)	(7,711)	(26,001)	-
At 31 December 2016	<u>144,578</u>	<u>93,826</u>	<u>36,175</u>	<u>274,579</u>	<u>733,997</u>
Net Book Value					Net Book Value
At 31 December 2016	<u>169,728</u>	<u>13,736</u>	<u>14,614</u>	<u>198,078</u>	<u>17,263</u>
At 31 December 2015	<u>176,014</u>	<u>11,835</u>	<u>173</u>	<u>188,022</u>	<u>43,592</u>

Capital expenditure authorised but not contracted for at 31 December 2016 and not provided for in the accounts amounted to £60,000 (2015 - £Nil).

The Trustees consider the market value of the Long Leasehold Land and Buildings to be materially in excess of the book written down value shown above.

The Trustees do not consider that the difference can be accurately defined without the benefit of a professional valuation.

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016 (continued)

9 LISTED INVESTMENTS AT MARKET VALUE

	<u>2016</u> £	<u>2015</u> £
Market Value at 1st January	1,221,016	1,253,252
Additions at Cost	225,040	422,376
Proceeds on Disposal	(163,304)	(439,134)
Net Investment Gain /(Loss)	133,677	(15,478)
Market Value at 31st December	<u>1,416,429</u>	<u>1,221,016</u>
Cost	<u>1,129,223</u>	<u>1,040,201</u>

All the above investments are either listed on a recognised stock exchange in Great Britain or are represented by unit trusts which are traded on a daily basis in the UK, and fall within the wider range of investments as defined by the Trustees Act 1961.

The Society's narrower range of investments as defined by the Trustees Act 1961 is covered by deposits held at Investec.

10 CHARITIES AID FOUNDATION

At 31 December 2016 this investment is represented by 56,058 (2015 - 56,058) shares in the FP CAF Fixed Interest B Accumulation Fund, having a market value of £67,899 (2015 - £64,084).

	<u>2016</u> £	<u>2015</u> £
Market Value at 1st January	64,084	63,454
Net Investment Gain /(Loss)	1,539	
Distributions not remitted	<u>2,276</u>	
	3,815	630
Market Value at 31st December	<u>67,899</u>	<u>64,084</u>
Cost	<u>56,060</u>	<u>56,060</u>

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016 (continued)

11 DEBTORS

	<u>2016</u>	<u>2015</u>
	£	£
Trade Debtors	91,929	16,269
Taxation Recoverable	12,593	8,414
Prepayments	15,667	18,455
Accrued Income	757,781	743,443
	<u>877,970</u>	<u>786,581</u>

12 CREDITORS

	<u>2016</u>	<u>2015</u>
	£	£
Trade Creditors	29,247	140,183
Taxation and Social Security	-	-
Accruals	46,808	70,017
Deferred Income	44,382	39,978
	<u>120,437</u>	<u>250,178</u>

<i>Deferred income brought forward</i>	39,978
<i>Released to incoming resources during the year</i>	(39,978)
<i>Deferred income arising in the year</i>	<u>44,382</u>
<i>Deferred income carried forward</i>	<u>44,382</u>

Deferred income consists of 2017 subscription income paid in advance and income relating to 2017 training courses and advertising invoiced in advance.

13 FINANCIAL COMMITMENTS

At 31st December 2016 the Society had commitments under other non-cancellable operating leases as follows :

	<u>2016</u>	<u>2015</u>
	£	£
Expiry date :		
Under one year	3,655	5,079
Two to five years	13,538	6,006
Over five years	-	169
	<u>17,193</u>	<u>11,254</u>

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016 (continued)

14 RELATED PARTY TRANSACTIONS

A member of Key Management Personnel is a Director of Edward Street Management Limited, the company that manages the Society's buildings car park. During the year the Society paid rent to the company of £3,636 (2015 - £3,636). As at 31 December 2016 there was a creditor balance owing to Edward Street Management Limited of £NIL (2015 - £NIL).

The wife of a member of key management personnel is employed by the Society. This employee received remuneration of £10,426 (2015 - £NIL) (including employers pension contributions) during the financial year.

15 DESIGNATED FUNDS

The funds of the charity include the following designated funds which have been set aside out of unrestricted funds by the trustees for specific purposes :

(1) Reserve Fund

The reserve fund consists of resources of the Society which are represented by land and buildings, fixed asset investments and a cash deposit with the Society's investment brokers, The Society operates a reserves policy that reflects its critical dependence on journal income.

(2) Designated Award Fund

The Designated Award Fund represents a legacy received in 2002. The Legator, Mrs May Hicks, expressed a non-binding wish that the Society uses its bequest to fund an annual award to be determined by the Council of the Society. The legacy is currently invested in the Charities Aid Foundation Fixed Interest B Accumulation Fund.

**16 STATEMENT OF FINANCIAL ACTIVITIES :
COMPARATIVE FIGURES BY INDIVIDUAL FUND**

	<u>General Fund</u>		<u>Reserve Fund</u>		<u>Designated Award Fund</u>	
	<u>2016</u> £	<u>2015</u> £	<u>2016</u> £	<u>2015</u> £	<u>2016</u> £	<u>2015</u> £
INCOME FROM :						
Charitable activities	1,257,787	1,817,943	-	-	-	-
Investment income	22	-	43,814	44,881	2,276	1,831
Total	<u>1,257,809</u>	<u>1,817,943</u>	<u>43,814</u>	<u>44,881</u>	<u>2,276</u>	<u>1,831</u>
EXPENDITURE ON :						
Raising funds	-	-	10,169	9,692	-	-
Direct charitable expenditure	1,174,243	1,728,678	8,271	8,219	1,500	1,500
Total	<u>1,174,243</u>	<u>1,728,678</u>	<u>18,440</u>	<u>17,911</u>	<u>1,500</u>	<u>1,500</u>
Investment Gains/(Loses)	-		133,677	(15,478)	1,539	(1,201)
Net Income/(Expenditure)	<u>83,566</u>	<u>89,265</u>	<u>159,051</u>	<u>11,492</u>	<u>2,315</u>	<u>(870)</u>

OPERATIONAL RESEARCH SOCIETY

NOTES TO THE ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016 (continued)

17 ANALYSIS OF NET ASSETS BETWEEN FUNDS

	General Fund £	Reserve Fund £	Designated Award Fund £	Total £
Tangible Fixed Assets	28,350	169,728	-	198,078
Intangible Fixed Assets	17,263	-	-	17,263
Investments	-	1,416,429	67,899	1,484,328
Cash Deposited with Investment Brokers	-	29,019	-	29,019
Net Current Assets/Liabilities	880,981	(2,684)	(10,205)	868,092
Total Net Assets	<u>926,594</u>	<u>1,612,492</u>	<u>57,694</u>	<u>2,596,780</u>

18 RECONCILIATION OF MOVEMENTS IN UNREALISED (GAINS)/LOSSES ON INVESTMENT ASSETS

	Reserve Fund £	Designated Award Fund £	Total £
Unrealised gains at 31 Dec 2015	180,816	(24)	180,792
Realised investment (gains) / losses during the year	(19,978)	-	(19,978)
Net unrealised investment gains/ (losses) arising during the year	126,364	1,539	127,903
Unrealised (losses)/gains included in net assets at 31 Dec 2016	<u>287,202</u>	<u>1,515</u>	<u>288,717</u>

DISPOSAL OF INVESTMENTS

	Cost £	Proceeds £	Book Gain/(Loss) on Disposal £	Realised Revaluation Gain/(loss) £
Reserve Fund	<u>136,013</u>	<u>163,304</u>	7,313	<u>19,978</u>
Net unrealised investment gains/ (losses) arising during the year as above			126,364	
Per Statement of Financial Activities			<u>133,677</u>	

19 PENSION FUND

The Society contributes to individual pension schemes established for each individual employee. The assets of these schemes are held separately from those of the Society in independently administered funds. The pension charge represents contributions payable by the Society to the schemes and amounted to £45,364 (2015 - £40,875).

Information about the Society

- (1) The Operational Research Society is a company limited by guarantee (no. 663819). It is also a charity registered in accordance with the provisions of the Charities Act 2011 (registration no. 313713)
- (2) The objects of the Society are given in its Memorandum and Articles, and can be summarised as:
 - (a) the advancement of knowledge by fostering, promoting and furthering interest in Operational Research; and
 - (b) the advancement of education by providing facilities for, and by subsidising it; endowing, organising or supporting scholarships or educational or training schemes; and conducting examinations or advising on their content.
- (3) The Society is empowered to do all proper things in pursuit of these objectives.
- (4) The affairs of the Society were managed during 2016 by the elected officers and members of the Board listed below. Together they constitute the Board of Directors of the limited company, and Trustees of the charity and the members of its management committee. Specific matters are delegated to particular committees of the Society by resolution of the Board and in accordance with the Society's Articles.

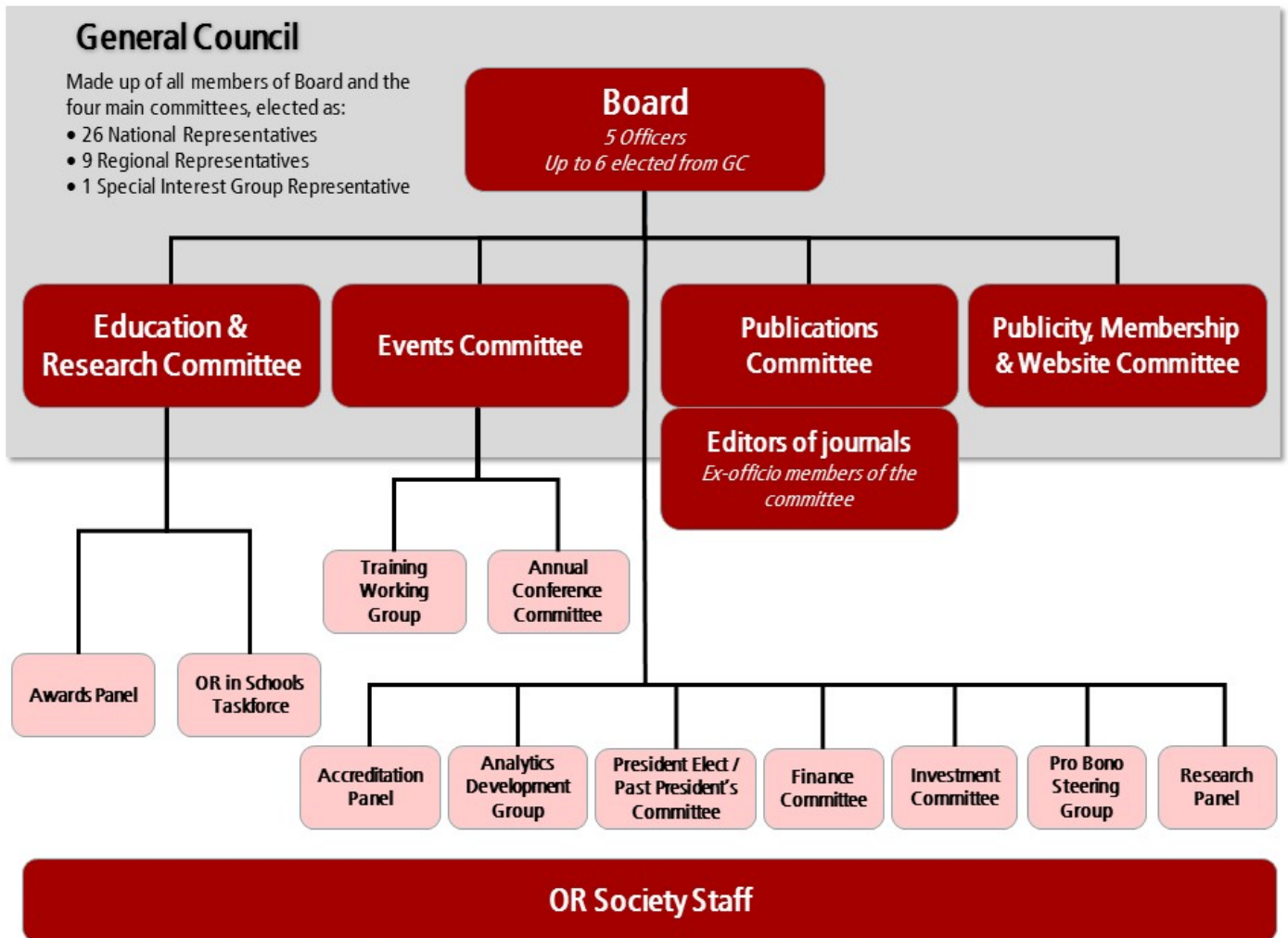
The following served as members of the Board in 2016

R A KAUFMAN	President	P ALBORES
J R HOPES	Vice President	S BEG
S PETROVIC	Vice President	S P COLLINGWOOD
S L ROBINSON	Past President	R W EGGLESE
J E WILLIAMS	Hon. Treasurer	M H KUNC
		F A O'BRIEN

Unless otherwise stated, changes in the membership of the Board occur at the end of a calendar year.

The Board is supported by a General Council with a maximum membership of thirty-six. These two bodies assist the Society in its ongoing commitment to involve as many members as possible in its affairs. The Board of Directors is responsible for governance and strategy, and the General Council, with its wide representation, provides advice, feedback and challenge, and monitors the Board's activity. Members of General Council have also, in all cases, been assigned to one of the Society's four main committees: Publications; Publicity, Membership and Website; Education and Research; and Events, and the Chairs of those committees are currently Board members.

The structure is set out in the diagram below.



(5) The committees are established to implement policies of Board & General Council with respect to meeting the Society's objectives and to controlling expenditure. The names of the committees are set out as follows, together with the object ((a) or (b) as above) towards the achievement of which they contribute:

Accreditation Panel	(a)
Analytics Development Group	(a)
Annual Conference Committee	(a), (b)
Awards Panel	(a)
Education & Research	(b)
Events	(a), (b)
Finance	Management of financial aspects
Investment	Management of investments
OR in Schools Taskforce	(a)
Past President's/President Elect's	Elections, planning & administrative reviews
Pro Bono Steering Group	(a)
Publications	(a)
Publicity, Membership & Website	(a)
Research Panel	(b)
Training Working Group	(b)

(6) Other Committees are set up from time to time for specific purposes, but they are given no delegated powers. In addition, the Society has a large number of active Special Interest Groups which are listed in the Journal of the Society. They contribute particularly to object (a).

(7) The registered address of the Society is:

Seymour House
12 Edward Street
BIRMINGHAM
B1 2RX

Its Secretary & General Manager is:

I G Blackett
The OR Society
12 Edward Street
BIRMINGHAM
B1 2RX

Its Bankers are:

The Co-operative Bank
Delf House
Southway
SKELMERSDALE
WN8 6WT

Its Solicitors are:

Sydney Mitchell and Co
Cavendish House
Waterloo Street
BIRMINGHAM
B2 5PU

Its Auditors are:

Mazars LLP
45 Church Street
BIRMINGHAM
B3 2RT

Its Investment Adviser is:

Tom Quicke
Investec
2 Gresham Street
LONDON
EC2V 7QN

Its Stockbrokers are:

Investec
2 Gresham Street
LONDON
EC2V 7QN

(8) The Society's investment policy is governed by the legislative provisions relating to charity investments, but the Society is not otherwise restricted in the way in which it can invest. However, it is the Society's policy not to invest in tobacco shares.

(9) These particulars are published in compliance with Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2015).

Public Benefit

The OR Society is a charity and meets the public benefit test as set out in the Charities Act 2011 in various ways:

Advancement of education:

Through the O.R. in Schools initiative, its many networking, training, and conferencing activities in schools, universities and workplaces, and extensive on-line resources, the OR Society promotes the understanding of O.R. and how it can be applied for the wider benefit. The OR Society is a participating society (with voting rights) on the Joint Mathematical Council of the UK.

Advancement of science:

Through its publications, conferences, and networking activities; representation on the Council for Mathematical Sciences, Science Council, funding bodies and international federations; and on-line materials and facilities, the OR Society supports, promotes and publicises research; raises standards of research and practice; and promotes the effective application of O.R. for wider social benefit. Through its accreditation and awards schemes, the OR Society recognises and promotes engagement, effectiveness and development in its members, further raising standards.

Advancement of community development:

The OR Society encourages volunteering and involvement through its Pro Bono O.R. initiative, involvement of members in outreach to schools and universities, and networks of Regional and Special Interest Groups.

The OR Society funds educational, development and research projects that are in line with its charitable aims of advancing knowledge and education through fostering O.R.

All OR Society events and training are open to all who may be interested. In addition, it minimises barriers to access by:

- (1) ensuring that many of its on-line resources are publicly and freely available;
- (2) keeping membership fees low, and offering reduced fees for unwaged groups; and
- (3) supporting Regional and Special Interest Group networks which offer free meetings.

In governing the OR Society, the Trustees have had regard to the Charity Commission's public benefit guidance.

Statements as to disclosure of information to auditors

In accordance with Company Law, as the charity's trustees, we certify that:

- so far as we are aware, there is no relevant audit information of which the Charity's Auditor is unaware; and
- we have taken all the steps that we ought to have taken in order to make ourselves aware of any relevant audit information and to establish that the Charity's Auditor is aware of that information.

Statement of responsibilities of the elected officers and members of the Board

Company law requires the elected officers and members of the Board to prepare financial statements for each year which give a true and fair view of the state of affairs of the Society and of the surplus or deficit of the Society for that period. In preparing those financial statements, the elected officers and members of the Board are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to assume that the Society will continue in business.

The elected officers and members of the Board are responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the Society and to enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Society and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Appointment of trustees

The officers and other members of the Board are elected by secret ballot of the Society's membership and the members of General Council respectively, to serve for a three-year term (except for the President, who serves one year as President-Elect, two years as President and a further year as Immediate Past-President). A member of the Board, other than the President, whose first term of office has expired may stand for election for one further term. At the end of 2016, two members of the Board completed their term of office: S L Robinson and S P Collingwood.

Induction of new trustees

New trustees receive a comprehensive information pack, setting out details of their role and responsibilities as both trustees and company directors, the nature of a charity, the Society's constitution, its policies on members' interests and expense claims, and including the Charity Commission's 'welcome' leaflet.

Members' interests

In accordance with Article 46 of its constitution, the Society requires that members of Board or committees having an interest in a matter to be debated should declare that interest and leave the room whilst the matter is discussed and decided. Members of the Training Working Group are drawn from organisations which have no interest in bidding for courses and wherever appropriate, recommendations on major charitable projects are made by a special expert committee comprised entirely of disinterested parties.

Approval of report

We approve this report and the audited accounts for the year 1 January to 31 December 2016, and recommend their adoption by the Society at its Annual General Meeting.

R A KAUFMAN President J E WILLIAMS Hon Treasurer

P ALBORES	J BATSON	S BEG	R W EGGLESE	J R HOPES
M H KUNC	F A O'BRIEN	S PETROVIC	A ROBINSON	

Being the elected officers and members of the Board of the Operational Research Society as at 17 May 2017.

I G Blackett
Secretary & General Manager
17 May 2017

History

In the autumn of 1947, at a dinner discussion convened at the Athenaeum Club in London, it was decided to form an Operational Research Club. The Club was inaugurated in April 1948 with an initial membership of 50, under the chairmanship of Sir Charles Goodeve and with Mr J A Jukes as the first Secretary. The exclusivity associated with the word "Club" was deliberately chosen for the initial period, to ensure clarification of what was meant by operational research and to attempt to develop a wholeness in what was otherwise a somewhat vague field. The Club met regularly in the rooms at the Royal Society for technical discussions. By 1953 the initial objectives had been achieved and the pressure to form a normal "learned and professional" society had become strong. Therefore, the Club was transformed into the Operational Research Society, and its first President was Sir Owen Wansbrough-Jones and the Hon Secretary Mr B H P Rivett.

Presidents of the Society

Sir Owen Wansbrough-Jones	1954/55
Sir William K Slater	1956/57
Professor M G Kendall	1958/59
The Earl of Halsbury	1960/61
Professor B H P Rivett	1962/63
Professor G A Barnard	1964/65
Professor R T Eddison	1966/67
Mr E C Williams	1968/69
Mr S Beer	1970/71
Professor K D Tocher	1972/73
Mr R C Tomlinson	1974/75
Mr A M Lee	1976/77
Professor M G Simpson	1978/79
Mr G H Mitchell	1980/81
Professor K B Haley	1982/83
Dr R S Stainton	1984/85
Professor J V Rosenhead	1986/87
Dr J C Ranyard	1988/89
Mr P N Thornton	1990/91
Professor C B Chapman	1992/93
Professor L C Thomas	1994/95
Mr I J Disley	1996/97
Professor R G Dyson	1998/99
Professor M Pidd	2000/01
Mr J Gibb	2002/03
Professor V Belton	2004/05
Professor J D Griffiths	2006/07
Mrs S M Merchant	2008/09
Professor R W Eglese	2010/11
Dr G H Royston	2012/13
Professor S L Robinson	2014/15
Ms R A Kaufman OBE	2016/17

OR Society Awards

Companion of Operational Research

Sir Hermann Bondi	1983	Professor M Pidd	2011
Mr D Hicks	1983	Professor P H Millard	2012
Professor R V Jones	1983	Professor D M Ryan	2013
Professor B H P Rivett	1983	Professor R M Davies	2014
Mr H R W Watkins	1984	Mr C R Humby	2014
Professor Sir David Cox	1985	Mrs S M Merchant	2015
Lord Ezra	1985	Professor S C Brailsford	2016
Mr P Hughes	1985	Professor J D Griffiths	2016
Lord Zuckerman	1985		
Sir John Kingman	1986		
Sir Dennis Rooke	1986		
Sir Charles Carter	1987		
Mr T P Frost	1987		
Professor H.Muller-Merbach	1988		
Mr D A Quarmby	1989		
Professor R C Tomlinson	1990		
Mr R A Showell	1991		
Mr G H Mitchell	1992		
Professor P Whittle	1994		
Mr J Plymen	1994		
Professor S Vajda	1995		
Professor K B Haley	1996		
Professor M F Shutler	1996		
Professor D J White	2001		
Professor K C Bowen	2001		
Dr R A Forder	2005		
Professor F Kelly	2005		
Mr G K Rand	2005		
Dr J C Ranyard	2005		
Professor J V Rosenhead	2005		
Dr J F Miles	2006		
Professor R G Dyson	2007		
Mr E K G James	2007		
Professor J Friend	2008		
Dr G Royston	2008		
Professor R J Paul	2009		
Professor A Mercer	2010		
Mr T O'Connor	2010		
Professor V Belton	2011		
Ms R A Kaufman	2011		

Goodeve Medal

B H Mahon	1976	J Sonander	2003
R J M Bailey	1976	R Hartley	2004
N R Tobin	1977	G Lanot	2004
I Sanderson	1979	S C Brailsford	2005
A J Williams	1980	V Lattimer	2005
J G Shepherd	1981	P Tarnaras	2005
F K Lyness	1982	J Turnbull	2005
L P Fatti	1984	K Taylor	2006
A H Christer	1985	B Dangerfield	2006
W M Waller	1985	S C Brailsford	2007
G Best	1987	D Evenden	2007
G Parston	1987	V Harinda	2007
J V Rosenhead	1987	P Harper	2007
D Rowland	1988	A Medina-Borja	2008
I R Turner	1989	K S Pasupathy	2008
R Bandyopadhyay	1990	K Triantis	2008
S Datta	1990	D Ronen	2009
D Schrady	1992	C A Goodhart	2009
D Wadsworth	1992	S Kumar	2010
A Bouzaher	1993	D A Nottestad	2010
S Offutt	1993	E E Murphy	2010
D W Bunn	1994	L C Thomas	2011
E R Larsen	1994	F R Johnston	2012
K Vlahos	1994	E A Shale	2012
G M Campbell	1995	S Kapoor	2012
C F Davis	1995	A Sheth	2012
M Carey	1996	R True	2012
D Lockwood	1996	P Kemmer	2013
C M Yeats	1997	A Strauss	2013
T Rehman	1997	T Winter	2013
D-W Tcha	1998	J Bengtsson	2014
T-J Choi	1998	D Bredstrom	2014
Y-S Myung	1998	P Flisberg	2014
F Duckworth	1999	M Ronnqvist	2014
A J Lewis	1999	S Crowe	2015
J Banasik	2000	P Bennett	2015
J N Crook	2000	M Daraktchiev	2015
L C Thomas	2000	M Utley	2015
K Korporaal	2001	S C Brailsford	2016
A Ridder	2001	D De Silva	2016
P Kloprogge	2001		
R Dekker	2001		
S Howick	2002		
C Eden	2002		
J E Beasley	2003		
H Howells	2003		

Stafford Beer Medal

JJ Jahng	2003	R Lederman	2012
H Jain	2003	R Johnston	2012
K Ramamurthy	2003	H Koch	2013
R Lindgren	2004	E Gonzalez	2013
D Stenmark	2004	D Leidner	2013
J Ljungberg	2004	D Denyer	2014
S Sarker	2005	M Hall	2014
S Sahay	2005	E Kutsch	2014
S Madon	2006	E Lee-Kelley	2014
C Middleton	2007	P Tallon	2015
W Cukier	2007	J Gerow	2016
S K Sia	2008	J Thatcher	2016
C Soh	2008	V Grover	2016
C Ashurst	2009		
N Doherty	2009		
J Peppard	2009		
F Thiesse	2010		
J Al-Kassab	2010		
E Fleisch	2010		
P O'Reilly	2011		
P Flanagan	2011		

Tocher Medal

K Kotiadis	2007/08
T Pitana	2009/10
E Kobayashii	2009/10
C Boer	2011/12
Y Saanen	2011/12
K-H Chang	2013/14
A-L Chang	2013/14
C-Y Kuo	2013/14

Cook Medal

P Jackson	2012/13
J Klobas	2012/13
D Pentland	2014/15
K Forsyth	2014/15
D MacIver	2014/15
M Walsh	2014/15
R Murray	2014/15
L Irvine	2014/15

Griffiths Medal

H Witteman	2013/14
J Stahl	2013/14

Doctoral Award

K Kaparis	2008	T Lidbetter	2013
A Strauss	2009	M Takac	2014
F Liberatore	2010	C Koc	2015
R Wood	2011		
K Rustogi	2012		

Beale Medal

J V Rosenhead	1992	K H Haley	2010
D J White	1993	F Kelly	2011
A H Christer	1995	M D Elder	2012
G H Mitchell	1998	K D Glazebrook	2013
H P Williams	1999	R Fildes	2014
R C Tomlinson	2005	J Friend	2015
P Checkland	2006	R Ormerod	2016
C Eden	2007		
L C Thomas	2008		
J D Griffiths	2009		

Silver Medal

Sir Charles Goodeve	1964	Sir Geoffrey Vickers	1975
Professor P M Morse	1965	Mr E.K.G.James	1979
Professor K D Tocher	1967	Professor E M L Beale	1980
Professor B H P Rivett	1968	Professor S Eilon	1982
Professor R T Eddison	1969	Professor G Dantzig	1986
Mr A M Lee	1970	Mr L V Kantorovich	1986
Professor R L Ackoff	1971		

Bronze Medal

R M Adelson	1965	M F Cantley	1969
J Stringer	1967	F D Lyness	1970
T A Burgin	1967	A M Duguid	1972
A R Wild	1967	C G Moss	1972
D J Chambers	1968		

President's Medal

D R Corkindale	1976	M Neighbour	2002
M L Chambers	1977	M Acutt	2003
R G Dyson	1977	P Loader	2004
M Sloman	1978	M Bryant	2004
J V Rosenhead	1979	P Bates	2004
P Doyle	1980	C McGuckin	2004
J Fenwick	1980	D Kelly	2004
G P Savage	1980	P Loucopoulos	2005
D B Gilding	1981	KG Zagrafos	2005
C Lock	1981	Y Pyrgiotis	2005
B Fokkens	1982	D Beis	2005
M Puylaert	1982	A Swain	2006
R S Hambleton	1983	A Ross	2006
A W Nimmo	1984	A Lewins	2007
C B Chapman	1985	M Sykes	2007
D F Cooper	1985	A Moon	2007
A B Cammaert	1985	M Allwright	2008
P Doyle	1987	J Ball	2008
J Saunders	1987	D Pankhurst	2008
M Pidd	1988	I Wright	2008
S R Clarke	1989	P Frangos	2010
A H Christer	1990	S Hughes	2010
K A H Kobbacy	1990	S Hammond	2011
B C Dangerfield	1991	K Slater	2011
C A Roberts	1991	C Marston	2012
M B Wright	1992	P Rose	2012
C P Thunhurst	1993	S Mardle	2013
C J Ritchie	1993	L Fildes	2013
A Khakee	1994	A Lewins	2013
K Stromberg	1994	E Husemann	2014
J J Glen	1996	D Lane	2014
H Tsoukas	1997	E Munro	2014
D B Papoulias	1997	G Owusu	2016
J H Powell	1998	S Shakya	2016
G Laporte	1999	R Dorne	2016
F Semet	1999	A Mohamed	2016
V V Dadeshidze	1999	A McCormick	2016
L J Olsson	1999	A Liret	2016
F Vasko	2000		
H Gilles	2000		
D Bright	2000		
V Kocatulum	2000		
E Wolf	2000		
J Moffat	2000		
J J Race	2001		
D Burnell	2001		



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