

A Celebration of the Life

Of

Patrick Arthur McKeown



Pat

16th August 1930 -10th February 2026

St Alban Woodland Burial Ground

Tuesday 10th March at 2.30pm

On behalf of Mary, Jonathan, Jeremy, Nick and all the family, may I welcome you all to this celebration of the life of Pat McKeown, in this beautiful place.

My name is Caroline Clark and I'm a celebrant accredited by Humanists UK.

We will begin our ceremony today with a few words about life and humanism, then we will have a tribute to Pat, including contributions from his colleague Professor Paul Shore and from his son, Jonathan. Our ceremony will also include three pieces of music, chosen for today by Pat himself. The piece we just heard was the fourth movement of Mahler's Fifth Symphony.

We follow that with a moment of quiet reflection where we will also listen to another piece of music. Then we will make our final farewells to Pat.

Our ceremony will be non-religious and therefore there won't be any hymns or prayers, but those of you with a religious faith may wish to say a silent prayer during the moment of quiet reflection.

Thoughts on life and humanism

Pat was a committed humanist. He and Mary were members and strong supporters of the British Humanist Association, known now as Humanists UK and that is why I, as a Humanist Celebrant, am conducting today's celebration of his life. Humanists UK is the national charity working on behalf of non-religious people who seek to live ethical and fulfilling lives on the basis of reason and humanity. You can read about Pat's views and reasons, his 'belief system', in the "Personal" section of his website (www.patmckeown.co.uk).

In brief, humanism, which can be said to pre-date Christianity, is based on seeking to live a good life, to exercise altruism and safeguard our planet, all based on rationality and science and the scientific method, with no belief in the supernatural.

Pat's favourite word in the English language was altruism; there is clear evidence that an act of kindness prompts others to do likewise. It is synonymous with love of your fellow humans. Humanists are in accord with those of religious belief who aim to do good and that is why all are so warmly welcome at this celebration today.

Humanism also embraces the knowledge that this is the one life we have. Death is the end of life and being dead is no different to not being born. This can sound cold and heartless but it isn't, it is actually very liberating. It makes you look at life, value it, really value it - value your family, value your friends and use the time you have to try to optimise your contribution to people and our world. We know that Pat valued his life, because he told us so, and from what you all know of him as your family member or friend.

We say that death is normal, it's natural; you cannot have life without death. I know that doesn't make it any easier when we lose the people we love. That is never going to be easy. Love is the bond that ties us together and the breaking of that bond is the hardest thing we have to face.

However, we know that the dead person lives on in our memories and in the memories of everyone who has known them. They live on too, in the genes they have passed on, and in the ideas they have shared, too. No one in this world fails to make an impact in some way and when someone has made a significant contribution to engineering and science as Pat has done, then they live on in that contribution to making the world a better place.

A Tribute to Pat

Pat's father, Robert Matthew McKeown, known as Bob, came from a Northern Irish family; the eldest of 12, he was born in London. Pat's mother, Bessie Augusta (Gus) White was born in Bristol. They met in Weymouth and married in 1928. Pat was born in August 1930 (and his brother Peter in 1938).

Bob had left the RAF and joined the Handley Page aircraft company initially at Cricklewood specialising in flight engineering and inspection. As he took more and more responsible jobs within the aircraft industry, (and later, the Air Ministry) they moved home several times, Coventry, Prestwick, Cambridge, Bristol and Weybridge. Shortly after surviving the World War II blitz on Coventry in November 1940, they moved to Prestwick in Scotland where Bob was responsible for receiving, and preparing for active service, American bomber aircraft which had flown across the Atlantic.

All these had to be flight tested and Pat remembers his first ever flight at about 11 years old in the tail turret of a Liberator bomber, over the Firth of Clyde to Ailsa Craig and back, a truly memorable experience, he said. In late 1944, Pat moved with the family to Cambridge and went to the Cambridge and County High School for boys; then in 1947 on to Bristol where his father was appointed Chief Inspector of the government Aeronautical Inspection Directorate overseeing all quality aspects of aircraft manufacture at Bristol Aircraft Company.

These included the mighty but flawed Brabazon airliner, the maiden flight of which, Pat and Mary watched.



Pat was now in the 6th form of Bristol Grammar School which he enjoyed; he played rugby in the 1st XV, became captain of athletics and sergeant major of the Combined Cadet Corps. This was the time he went with friends to a party and met a young woman called Mary Heath.....and the rest, as they say is history....."glorious history", he said.

He regretted that he didn't work as hard at his studies as he should because he failed his University entrance exams, an event which he credited with giving him a very big and ultimately beneficial shake-up.

Pat undertook his obligatory National Service, from 1949 to 1951, serving with the Royal Engineers at Marchwood military port near Southampton. This gave Pat interesting experience in shipping and port handling techniques – and some excellent sailing on the Royal Engineers' fleet of regimental yachts.

After his National Service Pat signed up to the Royal Army Reserve of Officers (RARO) and joined the Bristol Aircraft Company as a student apprentice. As well as practical, on the job training, he went to college on day release and night school to gain academic knowledge. He worked as an engineering designer and was in at the beginning of ground-breaking work on guided missiles which included new research into the dynamics of structures.

In 1954 Pat gained a national state scholarship, which his managers at Bristol Aircraft Company said he should take, at the College of Aeronautics at Cranfield. Here he undertook an intensive 2-year MSc in Aircraft Design, Aerodynamics, Propulsion systems, Materials and Production Engineering. It was also in 1954 that Pat and Mary married, in Bristol.

The young couple needed somewhere to live near Cranfield. Mary came from a Methodist family and a kindly minister in Wolverton found them low-cost accommodation above a shop opposite the old British Railways works. A friendly local bank manager and his wife allowed them to use their bath because the flat didn't have one.

While Pat was studying, Mary worked at Sogenique, the Newport Pagnell subsidiary of GSIP, a Swiss machine tool manufacturer based in Geneva. In 1956 Pat obtained his MSc and also went to work for Sogenique as a measuring machine specialist, supporting the sales and service side of the business.

Pat was still a Lieutenant in the Reserves and although he'd been at Sogenique for only two weeks he was called up to take part in the British, French and Israeli invasion of Egypt – which we now know as the Suez crisis. This earned him the nickname of “two-week wonder” from his new colleagues. By now Mary was pregnant with their first son, Jonathan.

Pat's Suez adventure involved him landing with the invasion force at Port Said and setting up a base from which to operate the port. As I'm sure you know, Suez ended in a humiliating defeat for Britain, the end of any claim we had to be a world power. Pat wrote a fascinating and somewhat scathing, monograph about his experience which he lodged with the National War Museum. You can read this on his website.

After returning from Suez, Pat resigned his commission and returned to work at Sogenique, where he stayed for the next 13 years. During this time he worked in both Newport Pagnell and Geneva, designing bespoke measurement equipment. An example of which is a machine named Galaxy, commissioned by the Royal Observatory Edinburgh in the early 60's, which determined from star field plates taken over many years whether the universe was expanding.

Here it was that his early work at Bristol Aircraft, in structural dynamics, gave him some very useful insights into some of the problems of machine tool dynamic inaccuracies, for example “chatter”. It was at GSIP that Pat developed methods of defining the real accuracy of machine tools which led eventually to the 3D error-mapping and software error compensation that lie at the heart of today's machine tools worldwide.

In 1964 Harold Wilson came to power and set up a Ministry of Technology for the first time, with Tony Benn in charge from 1966. One of its functions was to forge closer links between academia and industry and it made £1m of funding available to set up six industrial/academic units at British universities.

In 1968 Pat, having written much of the proposal to MinTech, went to work under Professor John Loxham at the Cranfield Institute of Technology, as it was called at the time. They managed to obtain one third of the total funding available. Quite a coup!



This funding was used to set up the Cranfield Unit for Precision Engineering. Within a year Professor Loxham retired and Pat was running the unit. The unit which went on to design, construct, commission and supply world-wide, a wide range of ultra-precision machine tools and metrology equipment.

One example of the work at the Unit was the developed a large capacity grinding machine which used diamonds to produce perfectly shaped segments of mirrors for astronomical telescopes.

Pat went on to be visiting professor at the University of California, Berkeley, the University of Wisconsin, Madison, and Nanjing University of Aeronautics in China. He led professional development short courses here and around the world, including Singapore, Australia, Taiwan and the USA.

In 1999, Pat became the founding president of the highly successful European Society for Precision Engineering and Nanotechnology, **euspen**, which has its headquarters at Cranfield and now has approximately 1000 members in 27 countries. Pat was proud that **euspen** attracts 50% of its members from industry and 50% from research institutes and academia, thereby carrying on the ethos of the original MinTech industrial unit formed so long ago.

Pat received lifetime achievement awards from the precision engineering societies of America, Japan and Europe and was awarded the Georg-Schlesinger Preis from the State of Berlin in 2007 for his work in production engineering in general and high precision engineering in particular. You can read about this in more detail on Pat's website.

He was awarded the OBE for work in the development of high precision engineering in 1991. He was also awarded the Faraday medal by the Institution of Electrical Engineers in 1999 for contributions to advancements in precision engineering.

I'd now like to introduce Professor Paul Shore to talk a little more about Pat's work.

Professor Paul Shore

Professor Pat McKeown, OBE, Fellow of the Royal Academy of Engineering has made enormous contributions to our daily lives through the advancement of precision engineering.

He was undoubtedly the World's most respected and recognised precision engineer of his time. The impact of his work, and that of the engineers, he developed was, and is, enormous. I'm honoured to be able to talk about him today.

Amongst many things Pat mentored me in public speaking. He advised me "to keep it upbeat and keep the audience engaged: I will do my best.

Professionally speaking Pat McKeown was many things: a precision engineer, a professor, an innovator, a business founder, a business leader and a builder of an international community. Pat excelled in the broadest sense.

As an engineer and researcher Pat received the highest awards from the most prestigious engineering organisations from around the globe. He was liked and respected from the west coast of the US to the east coast of Japan.

Pat's charm combined with his deep technical expertise equipped him in a unique way to gain people's confidence. These attributes made him super effective in establishing Cranfield as the global centre of excellence in precision engineering. Under Pat's leadership Cranfield and later its precision engineering spin outs thrived.

Working for Pat was tremendous, though it came with a notable level of expectancy.

Pat was determined; he revelled in advancement and the challenges of making things that much better. He never expected his team to work harder or longer than he did himself - though that was a high bar.

Pat was a wise manager, an incredible mentor, he gained people's trust and their dedication. Pat's management team were not "yes" people; they weren't recruited (or promoted) for being similar but to complement.

Pat's senior management team included a "straight-talking" Lancashire chap (Bill Wills-Moren) and reflective "deep thinkers" from Northants who did remarkable things yet with few words (Geoff Portas).

Pat was super generous with his time. Many mentored by Pat became renowned precision engineers. As Keith Carlisle commented to me last week "Pat used his skills to elevate others".

Pat would want me to mention Cranfield's Vice Chancellor of that time, Baron Henry Chilver. Pat and Henry were "in tune" in regards enterprise at Cranfield. This alignment enabled Pat's team to create advanced machines under industrial contracts. These had significant risk. They say pioneers take risks; Pat was one of them.

As UK industry started to struggle in the later part of the 70's Pat focussed on developing activity in the US. He would walk into to blue chip companies like; IBM, Kodak, 3M and secure major international contracts to design and build super complex machines at Cranfield. Pat was also a super salesman.

Alongside of all this industrial research, Pat established himself as the world's leading Precision Engineering Professor. He became the President of the International Institute of Production Research (CIRP). A highly prestigious position. And I know Mary your tremendous support made Pat's leadership of CIRP possible.

Together with others such as Professor Jack Dinsdale, Pat established a teaching Department for the Design of Machines. It made Cranfield a magnet for youngsters wanting to become leading machine designers. Many of the future employees of CUPE were recruited this way.

After Pat "retired" he threw himself into a new endeavour. Creating a European Society for Precision Engineering (euspen). He did so with his many professional friends and remarkable staff. euspen will celebrate its 26th International event in Poland this June of this year. Just think about it, Pat McKeown's post-retirement project has run for over ¼ of a century. And it looks well established to continue for many years.

So, this brings me to close with some of the impact from Professor Pat McKeown's work.

When you look at your phone ----- appreciate the tiny transistors within it are produced by machines having Pat's enabling technologies from Cranfield.

When you look at the large display score board at Twickenham you should know it's produced using Pat's enabling technologies from Cranfield.

When you watch Formula 1, appreciate a McKeown Foundation Precision Engineering student has designed the powertrain of that Mercedes. And if it doesn't win, no matter, as another has helped make the new engine of Max's Redbull.

When you learn that someone has had a medical scan, such as an MRI or a CT, appreciate that the scanners performance is improved using a metrology technique first advocated by Pat McKeown.

And when you look up to the stars, understand that a million miles from earth the James Webb Space Telescope is looking out into the universe, and it's doing so with mirrors made at Cranfield using a Pat McKeown ultra precision machine.

As a Humanist, perhaps Pat was not looking to build disciples, though he gained many followers. I'm proud to be one.

Caroline

When not working Pat was a devoted family man, with as he said, his wonderful sons, Jonathan, Jeremy and Nick. He also enjoyed rugby union, classical music, theatre and mountain walking.

We will now hear more from one of the wonderful sons, Jonathan, who will speak on behalf of all three.

Tribute to Pat: Dad, Grandpa and Great-Grandpa by Jonathan McKeown

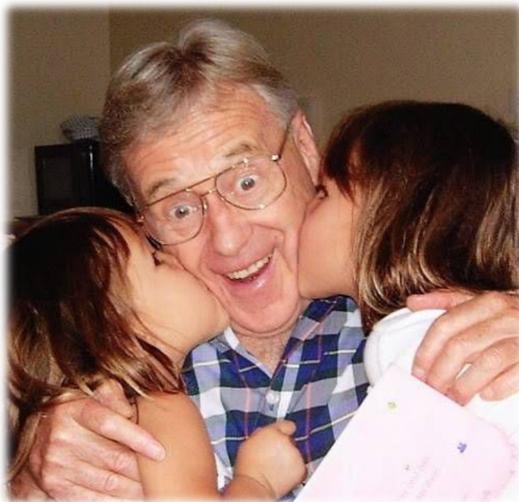
To see friends and family here - including those who have travelled from so far afield; from the US, Turkey, Germany, from all points of the compass and at considerable effort ... that would delight Dad. As it delights Mum, Jeremy, Nick and me. We are so pleased you are all here, and know that those who couldn't make it are thinking of Dad right now.

Dad was a great engineer. And also an amazing Dad, Grandpa and Great Grandpa. His most-used phrase - almost a catch phrase and used extensively both at work and at home - was 'Good for you!'

For me and my wonderfully competent brothers, Jeremy and Nick, every ball well caught, spelling test passed, recorder tune butchered, width swum, times-table learnt, bully stood up to or tooth extraction survived; any achievement or milestone reached, and every adversity overcome, however small, prompted an enthusiastic 'Good for you!' from him.

This continued past our taking the stabilisers off bikes, to bringing girlfriends home for tea, to exams passed, exams not quite failed, exams failed but come to terms with, studies, jobs, marriages and children. This was no mere parenting gambit at home; no management policy at work. It was just his deep-seated generosity of spirit and delight in the successes, the fulfilment of others.

When first his youngest son, Nick, and then his eldest grandson, Sam became engineers, Dad's pride knew no bounds.



When our Sam and Susi were little, Dad would often call in unannounced to our home *en route* home from work in the early evening, standing, besuited and bright-eyed on the doorstep wanting to come and play with Sam and Susi, aged just a few months, before their bedtime. "Can Sam and Susi play?" he'd ask with a wink. He knew we would soon be taking them off to Brunei and - in the days before mobile phones or the internet - needed to get his grandchildren 'fix' in first. They were his first grandchildren, of whom he was immensely proud - just as he was of each of

his subsequent seven grandchildren: Roshan, Ben, Bex, Matt, Jessica, Zoe, Olive and his two step grandsons, Jacob and Luke, his daughters-in-law who all loved him - and were loved by him - deeply, and his six great-grandchildren, Romy, Max, Teddy, Ella, Lucy and Nico.

The only less than charitable things I ever heard Dad utter were about over-privileged and under-compassionate people in public life. And - at least partly in jest - about horse-racing, when it occasionally supplanted rugby on TV. (He once muttered that he hoped all the jockeys would lose).

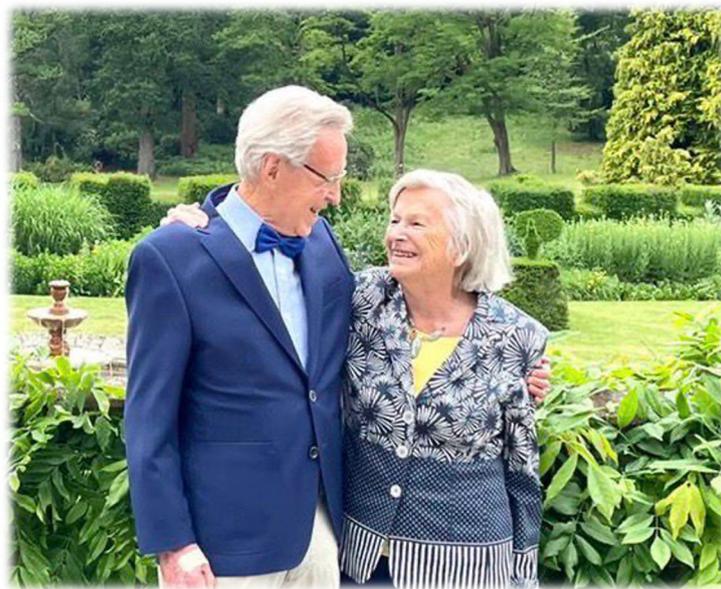
For much of the last 40 years, we have been a scattered family; at times spread over three or four different continents. Dad was always the force (and I think that's certainly the right word) behind arranging family get-togethers. Venues were booked, meals ordered, hotels booked, hikes mapped out - often months in advance. It was hard to decline, but always a joy once accepted. He pulled everyone together. Someone had to.

And he's drawn a great crowd again, today. Dad, Good for you!

His best and longest-standing friend and fellow humanist, David Radford, sadly died some 12 years ago. The two of them always seemed able to spark laughter in each other by some arcane chemistry. To paraphrase David's son, Julian, while one might sentimentally entertain the possibility that Dad and David are now having a belly laugh together again, both David and Dad would poopoo such unscientific nonsense. Unless, of course, they are.

Now let me tell you, with certainty, what Dad would have wanted for this gathering.

First he'd want to know that his wife of 71 years, Mary, our incredible Mum, Grandma and Great Grandma, is happy, safe and free to enjoy her life, her garden, her books and her family, and that she is supported by all our love. Well, she is.



Next, he would want any tears here to be tears of joy for a life well lived. He would be firm about that.

And thirdly, at this gathering he'd want the news from all of you wonderful people; family and friends. That means variously, about your medical studies, about what the tooth fairy brought you, about your charity work, about aviation, becoming an electrician, about agriculture studies, your travels, your hobbies, whether weight- lifting, music, art, books, sea shell collections, or making miniature gardens for imaginary people. And he'd be thrilled by it all. He'd want to know what you think about current events in whatever is your field of interest, whether that's nano- technology, Peppa Pig, aviation, studying International Business, nursery school, the civil service, the coffee shop business or investing. About working in healthcare, your wellness business, your boat, your motorbike, your new toys, your new home, winters in Chicago, DJ-ing in New York, your views on a prospective little brother, hotels in Turkey, your rowing team, swimming and swimming lessons, concerts attended, films seen, books read. Or written.

He'd want to hear what funny things your children or grandchildren said. He'd want your take on the old times, the current times and your hopes and plans for the future. And if you see someone here and you wonder what their connection was to him, he'd expect you to approach them and ask, to find out, to engage and enjoy, to discover, learn and delight in. He'd want us all to connect and re- connect, to swap stories and news - about him, yes of course, but mostly, I know he would say - about all of us.

And the England rugby team.

And imagine him listening in, looking on and proudly encouraging us, taking joy in our joy. And hear him saying ... 'Good for you!' Dad did not believe in an afterlife. He understood that death simply - and wonderfully - means a redistribution of matter into everything. It is in all of us that his presence will remain.

Dad! GOOD FOR YOU!

Caroline

I will end this tribute with some words that Pat wrote himself.

“I would like my funeral to be a celebration of the life of someone who has had the greatest of good fortune to have had a wonderful wife and lifetime partner, three wonderful sons of whom I am enormously proud, particularly for their loving, caring and generous natures, blessed by nine marvellous grandchildren who have brought so much stimulation, fun and further love into my life – and privileged to have enjoyed a highly satisfying career in which it has been possible to have some influence on technological developments of value to society at large.”

A Moment of Quiet Reflection

Let us now have a few moments silence, for each of you to be with your own special memories of Pat, fond and happy ones I'm sure. Those of you with a religious faith may wish to say a silent prayer.

As we take that time to reflect, we will hear Elgar's Sospiri for Strings, Harp and Organ, a great favourite of Pat's.

Committal

We have now come to the part of our ceremony when we will say our final goodbye and commit Pat's body to this special ground. I invite those of you who wish to and are able, to join me and the family now by the graveside.

Here, in this beautiful place, Pat will now rest in peace. We dedicate this plot, which he and Mary chose together, amid these natural surroundings, to every precious and treasured memory of Pat.

Pat knew and experienced love and friendship. He will always be your husband, your Dad, your Grandpa, your Great Grandpa, your brother, your uncle, your father-in-law, your colleague, and your friend. As long as you keep him in your hearts, that will hold true.

Pat will be part of this place for all time. Through the warmth of summer and the cold of winter; through the freshness of spring and the mists of autumn. He will be at peace.

Closing Words

Death ends a life but not a relationship. When someone we love dies, like Pat, it's natural for us to grieve them and to miss the constancy of their presence in our lives. Grief, it is said, is the price of our love.

And it is your love that will keep his presence alive. He will be there in your thoughts and your memories, in your shared experiences, in the way you lead your lives because of the enduring influence he had on you. Find ways to honour him that you know he would love, and speak of him often. He will always be with you.

Please take the time you need here, and when you are ready, we will make our way to the Fox and Hounds in Riseley for the second part of today's ceremony - the celebration of Pat's life. There will be refreshments and plenty of time for people to share their thoughts and memories of Pat, either individually or to the group. Pat's grandchildren will be making their contribution to start you off, and all are welcome to share.

Thank you all for coming here today to help us celebrate the good life of Pat Mckeown. Go in peace, friendship and fellowship with each other, and remember that what will survive of us is love.

We will leave while hearing the final piece of music chosen by Pat for today -
The Floral Dance by The Brighthouse and Rastrick Band.

a personal goodbye

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