Ray Dolby

Born 1933.
Inventor of sound systems
Available online at www.livesretold.co.uk

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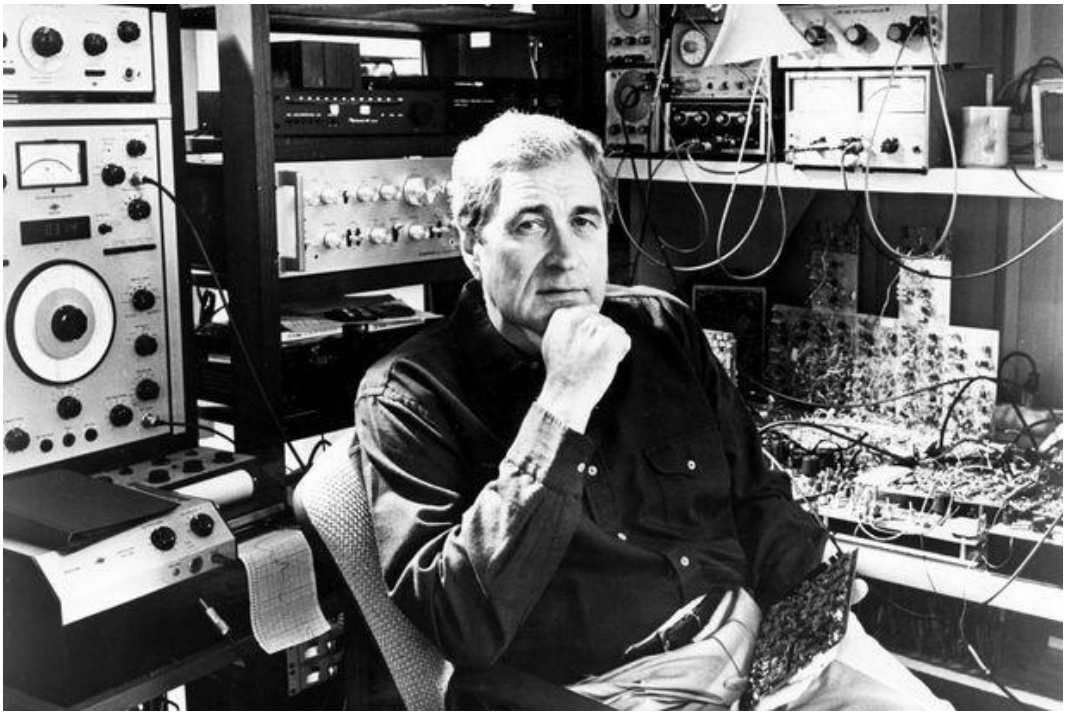
This life story was compiled in 2021, with acknowledgement and thanks, from Wikipedia and other internet sources.

1. Introduction



Ray Dolby.

The following chapter was archived in 2021, with acknowledgement and thanks, from Wikipedia.

Ray Milton Dolby OBE was an American engineer and inventor of the noise reduction system known as Dolby NR. He helped develop the video tape recorder while at Ampex and was the founder of Dolby Laboratories.

Dolby was born in Portland, Oregon, the son of Esther Eufemia (née Strand) and Earl Milton Dolby, an inventor. He attended Sequoia High School (class of 1951) in Redwood City, California. As a teenager in the decade following World War II, he held part-time and summer jobs at Ampex in Redwood City, working with their first audio tape recorder in 1949.

While at San Jose State College and later at Stanford University (interrupted by two years of Army service), he worked on early prototypes of video tape recorder technologies for Alexander M. Poniatoff and Charlie Ginsburg.

In 1957, Dolby received his B.S. in electrical engineering from Stanford.He subsequently won a Marshall Scholarship for a Ph.D (1961) in physics from the University of Cambridge, where he was a Research Fellow at Pembroke College.

Career

As a non degree-holding "consultant", Dolby played a key role in the effort that led Ampex to unveil their prototype Quadruplex videotape recorder in April 1956 which soon entered production.

After Cambridge, Dolby acted as a technical advisor to the United Nations in India until 1965, when he returned to England, where he founded Dolby Laboratories in London with a staff of four. In that same year, 1965, he officially invented the Dolby noise-reduction system, a form of audio signal processing for analog tape recorders. His first U.S. patent was not filed until 1969, four years later. The system was first used by Decca Records in the UK.

The Dolby B consumer noise-reduction system works by compressing and increasing the volume of low-level high-frequency sounds during recording and correspondingly reversing the process during playback. This high-frequency round turn reduces the audible level of tape hiss. The professional Type A system operates on four different frequency bands, and the final SR system on ten.

After his pioneering work with noise reduction Dolby sought to improve film sound. As the As Dolby Laboratories' corporate history explains:

Upon investigation, Dolby found that many of the limitations in optical sound stemmed directly from its significantly high background noise. To filter this noise, the high-frequency response of theatre playback systems was deliberately curtailed… To make matters worse, to increase dialogue intelligibility over such systems, sound mixers were recording soundtracks with so much high-frequency pre-emphasis that high distortion resulted.

The first film with Dolby sound was A Clockwork Orange (1971), which used Dolby noise reduction on all pre-mixes and masters, but a conventional optical sound track on release prints. Callan (1974) was the first film with a Dolby-encoded optical soundtrack. The first true LCRS (Left-Center-Right-Surround) soundtrack was encoded on the movie A Star Is Born in 1976. In fewer than ten years, 6,000 cinemas worldwide were equipped to use Dolby Stereo sound.

Dolby then developed a digital surround sound compression scheme for the cinema. Dolby Stereo Digital (now simply called Dolby Digital) was first featured on the 1992 film Batman Returns. Dolby Digital is now found in the HDTV (ATSC) standard of the United States, DVD players, and many satellite-TV and cable-TV receivers.

Dolby was a Fellow and past president of the Audio Engineering Society.

Death

Dolby died of leukemia on September 12, 2013, at his home in San Francisco at the age of 80. Dolby was survived by his wife Dagmar, two sons, Tom and David, and four grandchildren. Kevin Yeaman, president and chief executive of Dolby Laboratories, said "Today we lost a friend, mentor and true visionary." Neil Portnow, president of the National Academy of Recording Arts and Sciences, said Dolby had "changed the way we listen to music and movies for nearly 50 years" and that Dolby's "technologies have become an essential part of the creative process for recording artists and filmmakers, ensuring his remarkable legacy for generations to come."

In his will, Dolby bequeathed £35 million to Pembroke College, Cambridge, the largest single donation received by the University's fundraising campaign launched in October 2015. In December 2017 it was announced that his family has donated a further £85m from his estate to Cambridge University's Cavendish Laboratory and a new Ray Dolby Center will be established in 2022.

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2. Gramophone Obituary

The following obituary for Ray Dolby was archived in 2021, with acknowledgement and thanks, from the Gramophone magazine. It was written by Charlotte Smith, and was published on September 13th 2013.

Dr Ray Dolby, OBE, who has died aged 80, was an academic, an engineer and a true audio enthusiast, responsible for the electronics behind video recording, and of course the technologies for noise reduction and surround sound bearing his name.

From systems designed to remove the hiss from the humble cassette tape, thus turning it from a dictation medium to a true audio format, to professional noise reduction employed in analogue recording studios, and from the surround systems in the analogue cinema age to the latest Dolby TrueHD soundtracks on Blu-ray discs – all are testament to the achievements and constant curiosity of Ray Dolby.

After all, this was the man who said that ‘To be an inventor, you have to be willing to live with a sense of uncertainty, to work in this darkness and grope towards an answer, to put up with anxiety about whether there is an answer’, but who nonetheless managed almost single-handedly to invent an entire industry.

These days Dolby Laboratories is headquartered in San Francisco, and Ray Dolby’s contribution to the audio and cinema industries is marked by annual Academy Awards, or Oscars, being held in what is now called the Dolby Theatre in Hollywood, with the after show gala in the Ray Dolby Ballroom.

The company itself has won 10 Academy Awards and 13 Emmy awards over the years.

The Man Behind the Name

But while the Dolby name is everywhere, from consumer hardware to the credits on films and discs, most consumers know very little about the man behind the company.

Or as Ioan Allen, Dolby's senior vice president of cinema relations, puts it, 'The public doesn't really know about Ray Dolby. He's out there somewhere. But they're aware of the fact that a cassette labelled Dolby sounds good. That Dolby Surround sounds good. There's a switch – look, I can switch it in and out, isn't that great? You know.

'And – and they're kind of aware of the fact that Dolby on a theatre marquee sounds good. But all those things are possible because of Ray Dolby's inventions which are at the heart of the whole process.'

Also relatively unknown is that, while Dolby was an American, born in Portland, Oregon, he founded the company bearing his name in London in 1965.

That came after some years working for Ampex, where he developed the electronics making possible early video recorders, and then a PhD at Cambridge, where he became the first American Fellow of Pembroke College, an advisor to the UK Atomic Energy Authority, and held a two-year appointment as a UN advisor in India.

Beating the Hiss

The company's early work was on analogue noise reduction, at first for professional equipment and subsequently for domestic hardware, notably the Philips-invented compact cassette, which had been introduced in 1963.

Dolby B noise-reduction, which would become ubiquitous on pre-recorded 'musicassettes' in the 1970s, was launched in 1968 as a simpler version of the original Dolby A, introduced in 1966 as a professional-use system. It was followed in 1980 by Dolby C, which again became standard on most cassette decks, and offered a greater degree of noise reduction (around 15dB against the 9dB of Dolby B).

Dolby S was meant as the replacement for Dolby B when it arrived in 1989, with the intention it should be used on all pre-recorded tapes. However, by this time the CD was taking over from cassettes, and Dolby S never achieved the widespread use intended for it, even though Dolby claimed most listeners couldn't distinguish a Dolby S recording from a CD.

Surround sound for the cinema – and the home.

In 1977, Ray Dolby and his family moved to San Francisco, where the company is still headquartered, and in 1982 it launched Dolby Surround, a consumer version of the Dolby Stereo format, allowing surround sound to be enjoyed at home.

Using extra information matrixed into a stereo soundtrack, the Dolby system allowed the same audio to be played in mono, in stereo or – with a decoder – in surround, making it simple to distribute content via broadcast or on videotape without remixing.

Indeed, many home cinema enthusiasts started their obsession with a VHS cassette recorder, and a Dolby Surround (or later Dolby Pro-Logic) processor or receiver.

Dolby Pro-Logic brought with it improved channel-steering when it arrived in 1987, and the technology is still found in its latest IIx or IIz form in current AV receivers and processors, the latest IIz version being able to add a height component to the sound, using systems of 9.1 channels or more.

Incidentally, while the film most associated with the arrival of Dolby Stereo surround sound in the cinema is Star Wars, in fact it wasn't the first to use the technology. Ken Russell's Lisztomania used an early four-channel version in 1975, and the first to use the system branded as Dolby Stereo was the 1976 Barbra Streisand/Kris Kristofferson remake of A Star is Born.

However, the success of Star Wars certainly encouraged many cinemas to install Dolby Stereo surround systems.

Batman Returns – in Dolby Digital.

Summer 1992 saw the arrival of Dolby Digital surround in cinemas for Batman Returns: using lossy compression and a constant 320kbps bitrate, this managed to carry six channels of sound (or 5.1-channel) on conventional 35mm film prints. The technology first appeared in the home on Laserdisc releases in the mid-90s, and has since become a standard for home cinema on DVD and Blu-ray.

Various versions of the technology exist, including Dolby Digital EX, which uses up to 7.1 channels, but Dolby TrueHD took another step forward. Using Meridian Lossless Packing technology developed by the British audio company, it's able to carry up to 14 channels of 24-bit/96kHz audio, stored losslessly.

For now, that's the state of the art in home cinema technology, but Dolby Laboratories is still moving on: in 2012 its Dolby Atmos system, capable of up to 128 audio tracks, was premiered with the animated film Brave.

The first installation of the system was (unsurprisingly) in the Dolby Theatre, but it's hoped 1000 cinemas worldwide will have the system by the end of this year, and there are also plans to bring Atmos to home cinema equipment. That's going to need a lot more speakers…!

A great 20th century engineer

All of which isn't bad going for someone whose main passions weren't actually to do with electronics. In tributes to him, his family remembers overland drives from India, Dolby piloting planes across the Atlantic, and road trips to national parks, while Dolby himself said that, 'I've often thought that I would have made a great 19th century engineer, because I love machinery.

'I would have liked to have been in a position to make a better steam engine, or to invent the first internal combustion engine; to work on the first car. All my life, I've loved everything that goes; I mean bicycles, motorcycles, cars, jeeps, boats, sail or power, airplanes, helicopters.

'I love all of these things and I just regret that I was born in a time when most of those mechanical problems had already been solved and what remained were electronic problems.

'Remember that most of my life was that of an adventurer, not of somebody who is trying to invent something all the time. I wanted the experience of travelling to many parts of the world.

'Inventions were part of my life, but they didn't overtake everything that I was doing.'

Dr Dolby and his wife Dagmar supported numerous causes, and two centres of science, research and patient care – the Ray and Dagmar Dolby Regeneration Medicine Building at the University of San Francisco's Stem Cell Center and the Brain Health Center at California Pacific Medical Center – were opened in recent years thanks to their support.

Ray Dolby died at his home in San Francisco on September 12, after suffering from Alzheimer's disease for some years, and having been diagnosed with acute leukaemia two months ago.

He's survived by his wife of 47 years, whom he met when they were both students at Cambridge, his sons Tom and David, and four grandchildren.

Dagmar Dolby says of her late husband, 'Ray really managed to have a dream job, because he could do exactly what he wanted to do, whichever way he wanted to do it, and in the process, did a lot of good for many music and film lovers.

3. Flying

This chapter was archived in 2021, with acknowledgement and thanks, from the www.avweb.com website. It was by Joe Godfrey, and was originally published in January 2001.

When was your first flight?

From a very early age I was interested in cars, boats, engines, airplanes — anything that went. My first airplane ride was at age 14. My friend had just turned 16 and got his pilot's license, and a few days later he took me flying in an Aeronca Champ. I totally trusted him, and we did a series of steep turns, stalls and spins. The image of the earth turning around stayed engrained on my mind, but it was a long, long time before I had the chance to experience that again. By the time I learned to fly, in 1990, spins had been eliminated from the training. At one point I asked my instructor "What about spins?" and he said "We don't do that anymore," and I said "What do you mean? I've been looking forward to learning spins for over 40 years!"

He eventually realized that I was serious about it, but the airplane we were using — my 206 — wasn't certified for spins. So we rented a 152, which was certified for spins, and then my instructor said "We'll have to get some parachutes." That surprised me. Then by the next lesson he figured out that we didn't need them, but I wondered how many spins he had actually done. It felt like the blind leading the blind. We eventually did go up and did an hour's worth of spins, and that gave me much more confidence.

You had the airplane before you had the certificate? How did that happen?

I was 57 years old when I decided to learn to fly. I went to the flight school and the first thing the chief instructor did was try and discourage me. He said "You're old, your brain is shot, you can't expect to learn something like flying at this stage of your life". Throughout my life I had been into boats, and motorcycles, and Jeeps, and skiing, and I was convinced hews wrong. The fact that he discouraged me gave me some doubt, but it also gave me something to work toward.

I had to jump through some hoops with the FAA, because I had had a heart attack six years before. But I had changed the way I ate, got more exercise, and took the pills I needed to keep that from happening again. The medical approval took about three months, and as soon as I got my medical I soloed — in a 152—which gave me a tremendous sense of elation. I had proved I could do it and I went out and bought an airplane.

For one thing, I was fed up with the airplanes I was renting. Every airplane at the school was an older airplane and each one I preflighted had something different wrong with it. I started researching airplanes and I decided that a Cessna Turbo 206 would be the perfect airplane for me. It was ugly, but it was heavy hauler. I went to Wisconsin with the broker to buy the airplane and we flew it back to Gnoss. When the chief instructor at my school found out about it he said, "You're going to have to start all over again. You can't fly this solo until you get 25 hours in it." I did my private pilot check ride in that airplane, then had it outfitted with new avionics, and went on to do my instrument rating in it.

My family and I flew all over the western half of the U.S. in the 206. I thought I might want to put the 206 on floats, but I discovered that it wasn't good idea to put floats on a plane that had not been corrosion-proofed during manufacturing. So now it's a spare airplane and my younger son uses it. He has flown it all over the country.

If you were that elated at age 14, why did you wait until age 57 to learnt fly?

I took about eight hours of lessons during college, but I realized that it was an expensive proposition, and I didn't have any money. I also didn't have the time it would take to learn, so I put it on the back burner. I just didn't realize how long it would stay there.

How did you go about making it happen?

The Dolbys at St. Johns, Newfoundland, the jumping off point for the southern route to Europe via the Azores, a 1350 nm leg; April 1996.

One day I started buying flying magazines. I think that's when my wife Dagmar knew the handwriting was on the wall. She and my two kids — who were still small then — told me how dangerous it was, but I prevailed and convinced them that it wasn't, and finally everyone came around and grew to like the idea.

When did you get the TBM 700?

In 1993. I placed the order in 1991, before I got my instrument rating. I knew I wanted to do interesting things with airplanes, and I put myself on as fast a track as possible to be able to do that. When I ordered the TBM, there was a long list. My wife and I visited the factory in Tarbes in 1992 to see the progress, and then when the airplane was ready we flew over with the ferry pilot to pick it up and fly it back. I was able to put about 20 hours on the airplane in that process and that helped me a lot when it came to satisfying the insurance requirements.

Can we talk about your accident at Truckee? What lessons can you give us?

I had 1,400 hours in the TBM at the time of the accident, and a little over2,000 hours total time. It was a classic. I was making a 270-degreecircle-to-land approach. There were no lights surrounding the airport and it was a dark, moonless night. I made the mistake of doing what you're told you should do on a circling approach, which is to keep the airport in sight. But when you work out the geometry of this approach, there's an arc of somewhere between 120and 150 degrees from which it's impossible to see the airport. So what's the use of sticking your head out the window to look into inky blackness. I should have had my eyes on the instruments. I should have treated that phase of the approaches an instrument phase.

The FAA didn't fault me for anything I did, except they stuck to their guns on a circling approach being a VFR approach that's supposed to be flown with your head out the window. My argument was that there should be an approach that's sort of halfway between instrument and visual, and declare it as such, so that you would guide yourself from one waypoint to another through the approach. In talking to people since the accident I think that maybe that's the kind of approaches we'll see in the future.

At one point in the turn back to the airport I was very steeply banked and descending, but I thought I was flying a level constant-rate turn. As soon as I realized what was happening I corrected the attitude, leveled the wings and started pulling up, but a fence tripped me and I couldn't get the aircraft up again. So we went into the snow, the deceleration ripped the landing gear off the airplane, and we skidded along in the snow.

Did you have passengers?

Yes. My wife and my younger son and his girlfriend. Everyone was okay. We all walked away. We were practically at the end of the runway. But enough damage was done to the landing gear, the engine and the wing spar that the insurance company decided not to repair it.

I was not very proud of the accident, but it sure taught me a lot of lessons. I will never treat a circling approach as a VFR approach again. I want all my instruments available to guide me around the turn.

Arrival at Ol Malo, Kenya, north of Nairobi, a 3000 ft dirt runway, June 1999, with the Pilatus PC-12. The airport guard, Dagmar, Ray, and son David, also a pilot (commercial, instrument, fixed wing , and helicopter, private). Two months after this picture was taken the guard was gored to death by a buffalo.

Was it hard for you to "get back on the horse" after the accident?

Not at all. About two days after the accident I resumed my helicopter lessons, because I wanted to polish off that rating. Then I started researching airplanes, because I wanted to get back into it right away. We loved using thebe 700. We had one son in school at Santa Barbara, another at Hotchkiss school, which is a difficult place to get to in upstate New York, and with the TBM we could see our children frequently with very little hassle. It helped a lot as we were researching colleges, too. What I loved about the TBM was the range, butte Pilatus has even more range than the TBM, and it offered a chance to try different airplane.

There wasn’t a lot to choose from that could handle the 3,300-foot runway at Gnoss and still give me the range I wanted. The small jets wouldn’t do what we wanted to do. I’m waiting for a small, single-pilot jet that has the range, and the one on the horizon is the Sino-SwearingenSJ30-2. I’ve had one on order since December, 1991.

Where are your favorite places to travel?

I've flown 15 Atlantic crossings, including the initial ferry trip. We normally go the northern route, through Greenland and Iceland, but I've also flown the southern route through the Azores. It's 1,355 nautical miles from St.John's, Newfoundland to the Azores, and that's about a six-hour flight.

Do you enjoy flying in Europe?

It's not as easy as flying in the U.S. In Europe they don't have FBOs the way we know them, where you can order your fuel, pay for your fuel, get your weather, plan your flight, file your flight plan, all over one counter. Outside the U. S. typically you have to walk from office to office, or sometimes from building to building, to get all the information you need and get turned around and on your way. It's more work, but it's doable.

And how about flying in Africa?

That's a different story. It's hard work in Africa, and often you don't get all the information you need. We went to Morocco in '97 in the TBM, and to East Africa in '99 in the Pilatus. There's no radar in most of Africa so you're constantly giving position reports. It's very hard to get the weather there. Sometimes the weather office at the airport will only have the weather for that airport, so you wind up calling your destination, or making guesses.

We started the East Africa trip in Egypt, and flew over the Red Sea because of the wars and the flight restrictions in Sudan. There were also problems in Somalia and Ethiopia, so we made our way to Kenya by squeezing through Djibouti. We landed at Nairobi Wilson airport, then we headed out into the bush to a3,000-foot gravel strip north of Nairobi. We had a great time looking at the animals. That's about all there is to do there, so everyone goes on safaris. These days they're almost all photographic safaris, and I learned a lot about animals and how they behave. Animals have seen and heard Land Rovers for so long that it's just like another hippopotamus. It makes a rumbling noise and moves around and it's just part of their environment. You can drive the Land Rover right up to lions, and elephants, and it's an amazing way to see them.

Have you flown to Japan?

I've thought about it for years. You can get out to Alaska, then over to Hokkaido Island, but up until just recently there wasn't enough parking to stay overnight on the island. You wouldn't want to just refuel and press on to Honshu. At past NBAA shows there was a Japanese government booth promoting flying to Japan, but at the same time they're telling you that it isn't really practical. They were very apologetic about it, but offering no

real solution. So I had decided Japan would wait until we got the Swearingen. Then at this last NBAA show I heard that you can stay overnight at Hokkaido now, so maybe we will plan a trip there.

Ray at Gulfoss Falls, Iceland; May 2000.

The half-duplex AM VHF radios in airplanes must be at least as frustrating to you as they are to the rest of us. Did you ever consider designing a Dolby line of com radios or headsets?

It's not enough just to put one's brand name on a product. You have to bring some new technology to the table. And it's possible to think about veering offing many directions in one's business, but I think you have to stay focused to stay in business. If you veer too far off the original track you can lose your way. We know the players in the business that we're in, we know the manufacturers, and we know the distributors, we know how the business works. But aviation is an entirely different thing. I've been to NBAA and I read about what's going on, but I wouldn't say I know enough about that business to get into that market and compete.

I noticed Bose headsets in the cockpit of the Pilatus. Did you try a lot of brands before you settled on the Bose?

I tried a lot of them in the 206, and I still have a lot of them. It's a six-place airplane and I think each seat has a different brand. I have the Bose Series II in the Pilatus and the X in the helicopter.

You moved through the private, instrument, commercial, multi and helicopter ratings pretty fast. What other goals have you set for yourself?

I'm saving the glider rating for when the FAA takes away my medical.

You talked about spin training for the private. Are you interested in aerobatics?

Not really. Chandelles and lazy-eights are about as close as I've got to aerobatics.

Would you like to teach flying?

I've thought about it, but I'm not sure I would be a good teacher. You have to be able to speak effortlessly and have a constant stream of wisdom, but it's my nature to keep my mouth shut most of the time, and that wouldn't make me Avery good teacher.

How did you get to be an Officer of the Most Excellent Order of the British Empire?

It's a mystery. You aren't told why, and you don't ask why.

The Enstrom approaches the Dolby lakeside lawn at Lake Tahoe, California.

How were you notified and what's the ceremony like?

The ceremony took place at the British embassy in Washington, with the Ambassador and an assistant. That was all I could fit into my schedule at the time. I've met the Queen on other occasions. Princess Anne is a real film buff, and was good enough to come and open my new factory in England a few years ago.

What was the very first record that used Dolby noise reduction?

It was Ashkenazy playing Mozart. It started out as an audiophile, classical music thing, then it caught on with other styles.

What's on the drawing board at Dolby Labs?

Some years ago we reached the point at which we can make the output sound equal the input sound. For about a century we pursued the goal of being able to make a perfect recording, and now that problem is solved. The goal now is to make it more accessible, cheaper, more compact, more convenient, and that's what we — and, I suppose, other audio companies — are working on.

Do you listen to music when you fly?

I'm usually too busy. By the time I land someplace I don't stay on the ground too long because before I landed I've already got the weather for the next leg and filed my departure flight plan from the air. Even on the long trips I usually find that I'm too busy flying, talking to ATC and planning ahead and music and sound would just be a distraction.

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4. Philanthropy

Ray Dolby has been an extremely generous philanthropists. His gifts include two multi-million pound bequests to a college and department of Cambridge University, where he undertook his PhD.

Pembroke College, Cambridge

The following was archived in 2021, with acknowledgement and thanks, from the website of Cambridge University. It was published in December 2015.

The University of Cambridge announced today the gift of £35 million from the estate of Ray Dolby, founder of Dolby Laboratories and its world-renowned Dolby Noise Reduction, Dolby Surround, and successor audio signal processing technologies, which have revolutionised the audio quality of music, motion pictures, and television worldwide.

The gift to Pembroke College is the largest gift to a Cambridge College in modern times and will make possible the Ray and Dagmar Dolby Court. The gift is also the largest single gift so far in the £2 billion fundraising campaign for the University and Colleges of Cambridge that launched in October.

Ray Dolby, who died in 2013 at the age of 80, received his PhD from Cambridge in 1961 as a Marshall Scholar and was a graduate student and Research Fellow at Pembroke College. It was in Cambridge that he met his future wife Dagmar and studied at the University's world-renowned Cavendish Laboratory of Physics.

In 1965, he founded Dolby Laboratories in London and invented the Dolby System, an analog audio encoding system that forever improved the quality of recorded sound. He moved the company in 1976 to San Francisco, where it has been headquartered ever since and where it unveiled its new 16-storey headquarters in September.

Dagmar Dolby said: "The University of Cambridge played a pivotal role in Ray's life, both personally and professionally. At Cambridge, he gained the formative education and insights that contributed greatly to his lifelong groundbreaking creativity, and we also began a wonderful lifetime together there."

The Vice-Chancellor, Professor Leszek Borysiewicz, said: "Ray Dolby's bequest is an eloquent statement of his devotion to the University and all that it meant to him. This gift will create a spectacular setting in which future students will benefit from the University's education and begin to make their own mark in the world of innovation, as Ray did with such

notable impact.” The Master of Pembroke College, Chris Smith, said: “Pembroke is extraordinarily grateful to Ray and Dagmar Dolby for their generous support for the College’s expansion and all that it will mean to future generations. As our students receive their own formative educations and contemplate the world before them, they could be in no more appropriate setting than the Ray and Dagmar Dolby Court.”

The University’s current fundraising campaign will focus on Cambridge’s impact on the world and will feed into the dynamic environment of the Cambridge technology cluster, helping to drive innovation and entrepreneurship. More than £590 million has already been raised, including this gift, and 30,000 donors have already given to the campaign.

Other notable gifts by Americans – announced previously – include the following: $27 million (£17.5 million) by Bill and Weslie Janeway for the Faculty of Economics and Pembroke College; and, $25 million (£16.4 million) by Jamie Walters and Dr Mohamed El-Erian for Queens’ College and the Faculty of Economics. Dr El-Erian is Co-Chair of the campaign.

The University's long history as a catalyst for scientific innovation spans its close links to the Cambridge’s high-tech cluster and to the San Francisco area and Silicon Valley, as Ray Dolby’s legacy demonstrates.

The following was archived in 2021, with acknowledgement and thanks, from the website of the Cambridge Independent. It was written by Josh Thomas, and was published in February 2019.

Public spaces, a gallery and new student accommodation are proposed in a major expansion and redesign of Pembroke College in Cambridge.

Dolby Court - part of the Pembroke College proposed development. Image: Haworth Tompkins.

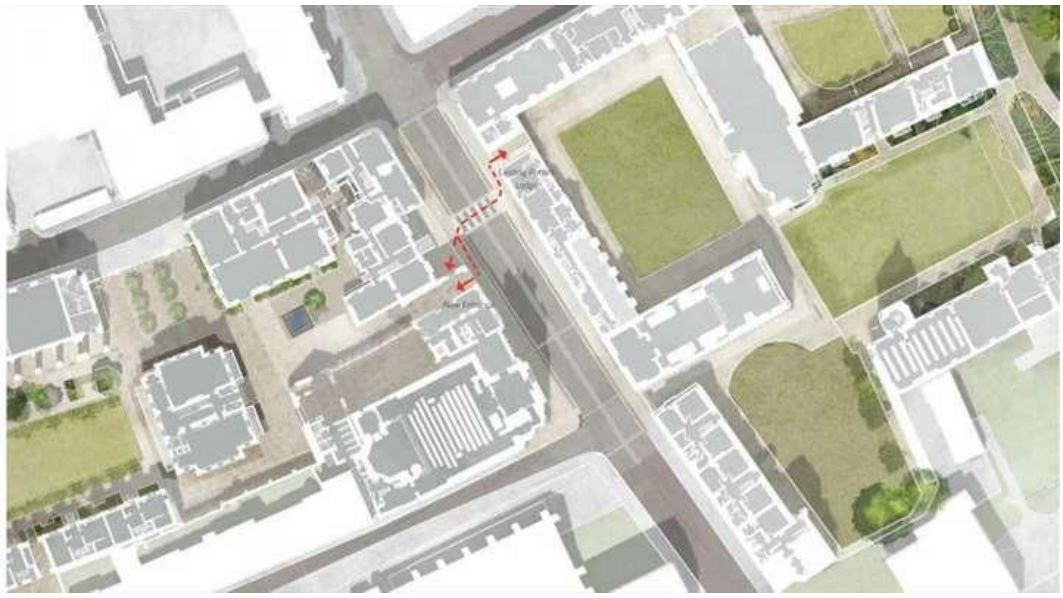
Dolby Court - part of the Pembroke College proposed development. Image: Haworth Tompkins (6926406)

The plans for the Old Press site form part of an extensive change for this historic part of the city, with major alterations lined up for the surrounding Mill Lane area. An application submitted to Cambridge City Council earmarks a 1930s lecture block in Mill Lane for demolition, so that a large new student accommodation block can be built.

The 92-room residential Dolby Court – named after Ray and Dagmar Dolby, following a gift from the sound pioneer's family – would feature three new buildings. The three-sided court opening up onto Stuart House, built in 1925 as a library and administrative space. It would become a social hub featuring common rooms, a reading room and café.

Miller's Yard, once home to an enclosed courtyard with restaurants but empty since 2014, would be retained under the plans, but one of the arches onto Mill Lane would become a glazed entrance to the student accommodation court behind.

A new pedestrian crossing would be created outside the existing entrance to Pembroke College in Trumpington Street.



The Trumpington Street crossing - - part of the Pembroke College proposed development. Image: Haworth Tompkins.

And there would be a new gatehouse, replacing 75 Trumpington Street, opposite the old college. This would contain a reception area, porter's lodge and a public art gallery and lead through to Kenmare Garden – one of a series of open public spaces leading down towards the river.

The college would convert the Emmanuel United Reformed Church, on Trumpington Street, into a lecture and performance space, after the congregation moves to its new home at St Columba's Church in 2020.

According to a design access statement submitted with the plans by Haworth Tompkins architects, the new development would be "nothing less than a second foundation" for Pembroke College.

The statement says the new layout and buildings would "create a new residential court and restore and inhabit a number of historically significant buildings facing the existing college, linked by new open spaces that continue and extend the language of Pembroke's distinctive gardens."

Kenmare Garden - part of the Pembroke College proposed development. Image: Haworth Tompkins.

Millers Yard - part of the Pembroke College proposed development. Image: Haworth Tompkins (6926412).

Andrew Martindale, an inspector for Historic England, said while some buildings would be lost because of the scheme, the improvements it would make to the area provide "justification" for their removal. Mr Martindale

also notes that the inclusion of the former United Reformed Church in the scheme “gives an opportunity for considerable public benefits”.

Little St Mary's Lane - - part of the Pembroke College proposed development. Images: Haworth Tompkins.

The University of Cambridge has been working with Darwin, Pembroke and Queens’ Colleges since 2014 to develop a masterplan to regenerate this area of the city. According to a masterplan for the scheme, the aim is to make it into a thriving new “gateway” to Cambridge. The project could cost up to £35million.

New Cavendish Laboratory, Cambridge

The following was archived in 2021, with acknowledgement and thanks, from the website of Cambridge University.

The University of Cambridge has received an £85 million gift from the estate of Ray Dolby, founder of Dolby Laboratories and its world-renowned Dolby Noise Reduction, Dolby Surround, and successor audio signal processing technologies, which have revolutionised the audio quality of music, motion pictures, and television worldwide.

The Dolby family gift is the largest philanthropic donation ever made to UK science, and will support the Cavendish Laboratory, the world-leading centre for physics research where Ray Dolby received his PhD in 1961. Thanks to this exceptional gift, the University has now surpassed the £1 billion milestone in its current £2 billion fundraising campaign. This is the second generous gift to Cambridge from the Dolby family, who donated £35 million to Pembroke College, Cambridge in 2015. The Dolby family is now the largest donor to the fundraising campaign, and the second-largest donor to the University in its 808-year history.

In recognition of this gift, the flagship building of the Cavendish Laboratory redevelopment will be named the Ray Dolby Centre, and is expected to open in 2022. In addition, a new Ray Dolby Research Group will be established at the Cavendish, which will significantly expand research capability and expertise within the new building. The group, which will be led by a new endowed Ray Dolby Professorship, will build

on and further strengthen the Cavendish Laboratory's status and impact as one of the greatest centres of physics research in the world.

"This unparalleled gift is a fitting tribute to Ray Dolby's legacy, who changed the way the world listened - his research paved the way for an entire industry," said Cambridge Vice-Chancellor Professor Stephen Toope. "A century from now, we can only speculate on which discoveries will alter the way we live our lives, and which new industries will have been born in the Cavendish Laboratory, in large part thanks to this extraordinarily generous gift."

"The Ray Dolby Centre will complete the development of the new Cavendish Laboratory. In addition to serving as a home for physics research at Cambridge, it will be a top-class facility for the nation," said Professor Andy Parker, Head of the Cavendish Laboratory. "This extremely generous gift from the Dolby family is the most significant investment in physics research in generations, and a truly transformational gift in Cambridge's history."

"The University of Cambridge played a pivotal role in Ray's life, both personally and professionally," said Dolby's widow, Dagmar. "At Cambridge and at the Cavendish, he gained the formative education and

insights that contributed greatly to his lifelong groundbreaking creativity, and enabled him to start his business."

"My father's time at the Cavendish provided him with an environment where he got a world-class education in physics, and many of his successful ideas about noise reduction were stimulated by his Cambridge experience," said Dolby's son David. "Our family is pleased to be able to support the future scientists and innovators who will benefit from the thoughtfully designed Ray Dolby Centre."

Ray Dolby, who died in 2013 at the age of 80, came to Cambridge as a Marshall Scholar in 1957. He received his PhD from the Cavendish in 1961, and was a student and later a Fellow of Pembroke College.

In 1965, he founded Dolby Laboratories in London and invented the Dolby System, an analogue audio encoding system that forever improved the quality of recorded sound. He moved the company in 1976 to San Francisco, where it has been headquartered ever since.

The new Cavendish Laboratory will be its third home since its founding in 1874, and was first announced by the government in its 2015 Spending Review. It promised a £75 million investment in the Cavendish, which has been confirmed today, helping maintain Britain's position at the forefront of physical sciences research. The funding will be delivered by the Engineering and Physical Sciences Research Council (EPSRC). Work on the new facility is expected to begin in 2019.

"This generous £85 million donation from the Ray Dolby estate along with the £75 million government has already pledged is a testament to the importance of this facility and the UK's leadership in science," said Science Minister Jo Johnson. "The UK is one of the most innovative countries in the world, and through our Industrial Strategy and additional £2.3 billion investment for research and development we are ensuring our world-class research base goes from strength to strength for years to come."

"A successful nation invests in science, and this grant signals our intent to lead the world," said Professor Philip Nelson, EPSRC's Chief Executive. "The facilities will be open to researchers across the country and encourage collaborative working between academics and institutions. Clearly Ray Dolby valued the university that nurtured his talents and, in making his bequest, has made a truly generous contribution to future generations."

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5. Personal Memoir by Peter Cowie

The following was archived in 2021, with acknowledgement and thanks, from the www.criterion.com website. It was written by Peter Cowie, and was published in April 2016.

Listening With Ray Dolby

Ray Dolby with Peter Cowie and Dieter Kosslick at the Berlin Film Festival in 2012.

Ray Dolby did not match the conventional image of an eccentric inventor, nor that of a business mogul. Tall, handsome, a keen pilot and downhill skier, he eschewed the limelight, and yet he fought with tenacity to protect his name and brand. The history of motion pictures has been marked by such innovators as Lee de Forest (a developer of sound-on-film recording) and Herbert T. Kalmus (cofounder of the Technicolor Corporation), but only Dolby has become a household name umbilically linked to the fields of music and cinema in the way that Gillette and Hoover gave their names to excellence in other domains of everyday life. Dolby now represents a benchmark by which the recording of sound and its playback on disc and in movie theaters is judged. You'll find the company's logo on just about every disc that Criterion has released.

Not many people realize that Ray was also one of the inventors of the original videotape recorder. The VTR was a kind of Holy Grail for the fledgling television industry of the late forties and early fifties. If a way could be found of recording a live program on tape, then it could be re-broadcast some hours later for a different time zone in the United States. Ray was only a teenager when he began research into this at the Ampex Corporation, but by 1956, at the age of just twenty-three, he was a key member of the team that unveiled the first videotape recorder at a press conference in Redwood City—to wild acclaim. Television would never be the same again.

After receiving his doctorate from the University of Cambridge, Ray accepted an offer to go to India on behalf of UNESCO as an electronics expert. Ray told me that during his sojourn in India, he'd "had this thought churning around in my mind—how to reduce the hissing noise in [magnetic tape] recording." He left in 1965, having decided to set up shop in the UK, and persuaded companies like Decca Records and EMI to use his noise-reduction system, which revolutionized the record industry, eliminating the hiss that had bedeviled both classical and popular music recordings.

Ray's invention marked a significant watershed where listening was concerned. By the late 1960s, LPs sounded altogether different. Suddenly, one was closer to the music, intimately connected with every element of the performance. It was like visiting a great art gallery, and seeing paintings that had been cleaned and restored to their pristine beauty—or simply gazing out of a freshly washed window at a landscape that could finally be viewed in sharp focus.

Next in line for Ray was the film industry. His interest in movies dated back to his early childhood, when he had seen Walt Disney's Fantasia. In 2010, he told me, "Whenever I went to the movies, I thought, 'This sound is really terrible. How can that industry not be paying attention to what's going on here?' " During a visit to London's Elstree Studios, he was shocked to see the appalling state of the design, manufacture, and maintenance of sound equipment. "Nobody cared about the sound on motion pictures in those days," he lamented. "I went to a vice president of marketing at Universal who started shouting at me, saying, 'You're crazy! There's only two things that sell movies: good stories and comfortable seats. Get out of here!' "

Stanley Kubrick, however, admired the work that Dolby had accomplished in music, and A Clockwork Orange was the first feature film to use Dolby noise reduction on all premixes and masters, although it was ultimately released with a conventional optical soundtrack.

Many films followed suit. Star Wars would never have enjoyed such a massive success in 1977 had it not been for Dolby Stereo. If someone alighted from a cab, wearing a Dolby T-shirt, the lines of people waiting to enter the theater for Star Wars would burst into spontaneous cheers and applause. Suddenly, all the studios wanted to use Dolby, and what Ray and his engineers had invented had a significant impact on movie attendances. So-called "surround" sound helped facilitate the studios' enhancement of their palette of rapidly evolving special effects and, during the years that followed, C.G.I. technology. An industry that had seemed doomed by the advent of home video entered a new phase, with the "theatrical experience" coming to the fore once again.

The first Star Wars film in 1977.

Ray and his engineers—Ioan Allen and David Robinson—sought to improve his system with each passing year. Dolby Stereo was succeeded by Dolby Surround, which in 1992 gave way to Dolby Digital and then to Dolby Surround EX, and, most recently, to Dolby Atmos, with its speaker channels in the theater ceiling ("the voice of God," quipped Ray).

I was fortunate to know Ray during the final years of his life, working with him on his archives in San Francisco. He was a man who kept every receipt, every letter, not to mention the numerous patents he had developed. I waded through boxes filled with documents from his time as a Marshall Scholar at the University of Cambridge, from his years working for UNESCO in India, and from the time in South London where he and his tireless wife Dagmar founded Dolby Laboratories in 1965.

After a morning's interview session, Ray would take me to a light lunch in San Francisco's Pacific Heights, or further afield in one of his cars—the BMW, the Jaguar, or the Tesla that he loved so much. You could go anywhere with Ray and not feel in the public eye. His diffidence and self-effacing approach to the media meant that he was rarely recognized as a luminary except by his friends and business colleagues.

He could not have accomplished so much without two manifest characteristics—curiosity and passion. His Finnish roots may have given Ray his calm, matter-of-fact attitude, as well as a fondness for classical music. To his American upbringing, however, he owed his technical skills and his sturdy, controlled ambition through the years.

Ray would listen to you intently and then respond to a question in comparatively few words, revealing his Nordic inheritance. He talked with assurance and discretion, but never with such assurance and discretion as on the subject of wealth. After Dolby became a publicly traded company, Ray's fortune was estimated at around $3 billion. "I honestly don't know how much I'm worth," he would tell me. "I never really wanted to make a lot of money, but just enough to enjoy life as I wanted. And I've done that."

During my visits, Ray and I would often conduct our interviews at his house in Sonoma. One day, after a lengthy conversation, he strolled outside and we sat down facing the valley fringed with numerous olive trees. "Listen," he said, and we could hear the soughing of the wind in the high grass. I told him that it reminded me of certain scenes in Terrence Malick's Days of Heaven, which remains a glorious example of Dolby Stereo recording and re-recording. "Exactly," purred Ray. For him, on a music recording or a movie soundtrack, the silence between the sounds mattered even more than the sounds themselves.

The Davies Symphony Hall, San Francisco.

Ray passed on in September 2013, at the age of eighty. The following January, a celebration of his life was held in San Francisco. Some 2,000 guests crowded into Davies Symphony Hall to hear tributes from all sides of the film and music worlds—from Michael Tilson Thomas, Walter Murch, Mickey Hart, drummer of the Grateful Dead, and George Lucas, among many others. A joyous occasion, reminding the audience that almost everything we hear today, in shopping malls, in our own homes, in movie theaters, has been improved by what Ray Dolby achieved as an inventor.