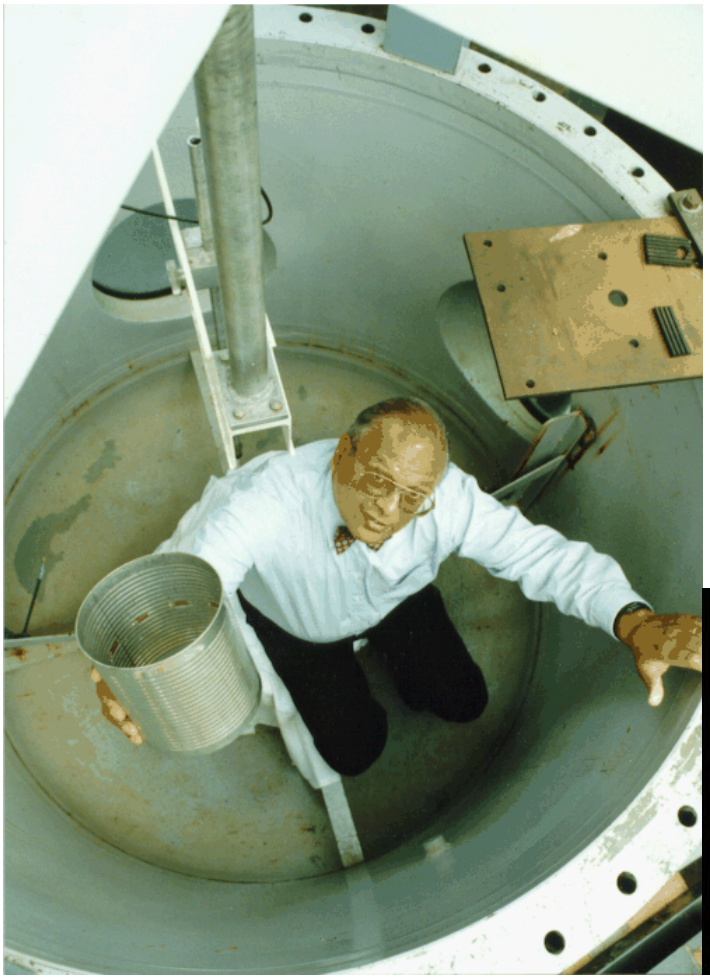

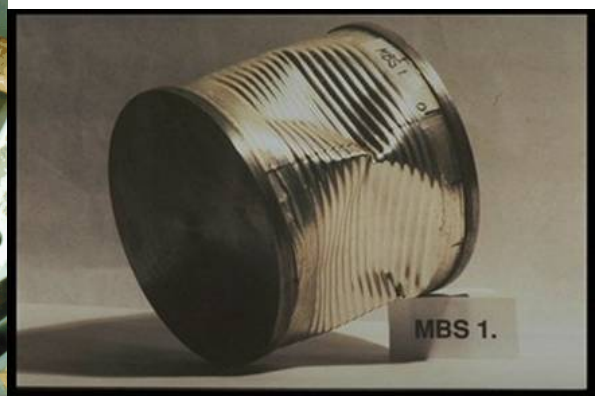

Professor Carl T. F. Ross BSc (Hons.), PhD., DSc., CEng., F.R.I.N.A., M.S.N.A.M.E. University of Portsmouth

His contributions to engineering science were recognised in 1992 by the award of a Doctor of Science degree from the Council of National Academic Awards, London, which was conferred on him by Her Royal Highness Princess Anne

See:
http://homepage.ntlworld.com/carl.ross/page3.htm
https://www.youtube.com/playlist?list=UUz2iogh6nREFWmKHswDKIUA

Extract from "Pressure Vessels: External Pressure Technology", Horwood Publishing, 2001 (ISBN:1-898563-74-8):

Carl T. F. Ross was born in British India and educated in Bangalore at St Joseph's European High School during the closing years of the British Raj. Coming to England, he attended the Chatham Technical School for Boys (1948-51). He passed the entrance exam for "Chatham Tech" (his 12+) on his third day of attending school in the UK; this was followed by part time education at the Royal Dockyard Technical College (1951-56) at Chatham, Kent where he served a five year shipwright apprenticeship. At the age of 20, he was the outright winner of the I.N.A. Elgar-Martell scholarship, which wholly financed his university education for 3 years. Using the proceeds of this scholarship, he proceeded to King's College, Newcastle-upon-Tyne (University of Durham), obtaining a B.Sc.(Hons) degree in Naval Architecture (1956-59); also working as a part time draughtsman at HM Dockyard during university vacations.

For the next two years he laid the foundations of his powerful industrial experience as Designer in the Project Design Office at Vickers-Armstrongs (Shipbuilders), Barrow-in-Furness (1959-61). His outstanding work was acknowledged by promotion to the position of Deputy Chief of the Project Design Office. Prior to this, he was sponsored by 'Vickers' to carry out full-time scientific research, as a post-graduate student in the Department of Engineering, University of Manchester (Jan. 1961-Dec. 62), where in 1963 he gained his PhD for research in stress analysis of submarine pressure hulls.

He brought his industrial experience from Vickers-Armstrongs into teaching, first as Lecturer in Civil and Structural Engineering at Constantine College of Technology, Middlesbrough (now University of Teesside) (1964-66), and later to Portsmouth Polytechnic (now University of Portsmouth) as Senior Lecturer in Mechanical Engineering. At Portsmouth, he was promoted to Principal Lecturer in Mechanical Engineering and then to Reader of Applied Mechanics and eventually to Professor of Structural Dynamics; he still works at the University of Portsmouth in a part-time capacity. From 1988 to 1993, he worked as a part-time lecturer in the Department of Mechanical Engineering at the University of Surrey at Guildford.

His research is based on computational methods, tested experimentally with colleagues. He has made important discoveries on the buckling of ring-stiffened cylinders, cones and domes, under external hydrostatic pressure and has also developed the application of microcomputers on finite element analysis. In 1971 he co-invented the tube stiffened pressure hull, making for greater submarine strength. In 1987 followed his structurally more efficient "bean can" pressure hull invention and also the cheaper satisfactory dome-cup end for submarines. He used the food can to help him invent the corrugated pressure hull of a submarine, so in 1993/1994, he thought that he would use 'rocket science' to reinvent the food can. He realised that if he increased the half-cone angle of the corrugations of food cans, he could make them stronger and thus reduce the thicknesses of their curved surfaces. He realised that in the USA alone that they consume about 300 million beverage cans per day and according to Omega Research Associates, Pittsburgh, Pennsylvania, USA, about 32 billion food cans are consumed per annum, worldwide. Thus, if one could decrease the wall thicknesses of food cans, one could make large savings in their manufacture. Also, it would be an environmentally friendly invention. Hence, he thoroughly analysed four standard food cans and found that he could make substantial savings on their wall thicknesses; in one case he was able to decrease the wall thickness of a food can by 57.1%, without it losing any

of its strength! He tried to patent his invention through his employer in about 1993, but failed to do so. So he published a paper on this topic in the 'Journal of Thin-Walled Structures' in 1996, (CLICK: http://dl.dropbox.com/u/39907336/CorrugatedFoodCanRedesign_2.pdf); some ten years later, he noted that industry had incorporated his recommendations. In about 2006, he noticed that this recommendations had resulted in a saving of about 2.2 pence per typical food can, thus, the worldwide savings due to this recommendation amount to about £700- million per year!

In 1995, with colleague David Jordan came the invention of an important method for improving the stability of roll-on, roll-off car ferries, reducing the risk of vessels capsizing in the event of flooding on the car deck. This invention is demonstrated in two videos on 'You Tube',

Since then, Carl has invented a two-storey road roundabout, to reduce traffic congestion at 'cross-roads' and an enclosed double-decker motorway, where the latter addresses the reduction of mankind's carbon footprint, while providing more road space for traveling cars, without using more land for this purpose. He has also worked on exploiting the deep oceans for energy resources and carbon burial. Carl has also written a paper on "Star Wars Underwater", where the global military defence proposal made in that paper may prove superior to global military defence by 'surface' star wars. Another of his papers is on the conceptual design of a submarine to explore Jupiter's Galilean moon, namely Europa, for extra-terrestrial life. This submarine can dive to a depth of about 60 miles (96km), or the very bottom of Europa's oceans. During his final year at Durham University, he was elected Captain of the Durham University Boxing Club and in 1959, he became the University Champion of the British Isles at light-welterweight. He also played hockey for the King's College first eleven.

Currently he is developing a large drilling rig and a dredger to enable oil and gas exploration in water to a depth of about 7.16 miles (11.52km); the deepest point on Planet Earth's oceans. This important application stems from his earlier research on pressure vessels whilst at Manchester University.

On October 29th, 2008, he read a paper at the Institute of Physics, London, on "Deep Sea Methane Retrieval and Carbon Burial". One important contribution from his paper, was his idea of counteracting the effects of positive feedback on global warming caused by the melting of the floating Arctic ice pack. According to Professor James Lovelock, "In the summer of 2008, some 60% of the Arctic ice pack melted". Lovelock added, "This effect caused a darkening of the Arctic Circle, so that more of the Sun's rays were absorbed by Planet Earth". The effect of this was to cause positive feedback, so that even more of the Arctic ice pack will melt in future Arctic summers. Lovelock believes that within 5 to 15 years from the year 2008, the Arctic ice pack will completely melt and there will be a step rise in the Earth's temperature of about 5oC! Ross heard Lovelock's statement on the TV broadcast on BBC 4, on 19th October, 2008; at the end of the TV programme "High Anxieties: The Mathematics of Chaos". Ross' immediate reaction to Lovelock's statement was, "Why don't we paint the roads and rooftops white, so that they will reflect the Sun's rays back into outer space! Why don't we float large sheets of white polystyrene on the Earth's oceans to reflect even more of the Sun's rays back into outer space?" Ross added, "We can cool Planet Earth! We can save the Planet!" His October 2008 Institute of Physics' paper is published in Power Point, on this website under the hyperlink "Saving the Planet" below.

In 1997, his students won the title and runner-up of "The Young Stress Analyst of the Year" competition. He has written 21 books, one of which is on the reading lists of Oxford and Cambridge Universities, while another was a SARTOR recommended book. The book from which this extract has been made is defined by industrialists as an "industry standard" book. He has lived an unusual life and this is borne out in his autobiographical book, which is called "Darkies Can Fight" ISBN (10) 190520065X. The book can be

downloaded, FREE of Charge, by CLICKING the link:
http://dl.dropbox.com/u/39907336/My%20Life%20Story-Second%20Edition-14-06-2007.pdf

Sayings by Carl T. F. Ross:
"I believe that it is better to know a lot about a little than a little about a lot. I believe that it is better to know everything about nothing than nothing about everything; because if you understand everything about nothing, you may just be able understand the creation of the Universe"--Carl T. F. Ross--March, 26th, 2011.

"The difference between heaven and hell is that, in heaven you are faced with an infinite number of solvable problems and in hell you are faced with an infinite number of unsolvable problems"--Carl T. F. Ross--April, 9th, 2011.

"A video is worth a thousand pictures"--Carl T. F. Ross--April, 24th, 2013.

Selected Publications:

Ross, C.T.F. (1965), The collapse of ring-reinforced cylinders under uniform external pressure, Trans RINA, 107, 375-394.

Ross, C.T.F., (1975), Finite elements for the vibration of cones and cylinders, IJNME, 9, 833-845.

Port, K and Ross,. C.T.F., (1980), Free vibration of submerged thin-walled domes, Proc. Conf. recent advances in structural dynamics, University of Southampton, 2, 427-436.

Ross, C.T.F. & Johns, T., (1983), Vibrations of submerged hemi-ellipsoidal domes, J of Sound and Vibration, 91, 363-373.

Ross, C.T.F. & Mackney, M.D.A. (1983), Deformation and stability studies of thin-walled domes under uniform pressure, J. Strain Analysis, 18, 167-172.

Ross, C.T.F. (1987), Design of dome ends to withstand uniform external pressure, J. Ship Res., 31, 139-143.

Ross, C.T.F. (1987), A novel submarine pressure hull design, J. Ship. Res., 31, 186-188.

Ross, C.T.F. Emile, & Johns, T., (1987), Vibration of thin-walled domes under external water pressure, J. Sound & Vib., 114, 453-463

Ross, C.T.F. & Humphries, M., (1993), The buckling of corrugated circular cylinders under uniform external pressure, J. Thin-Walled Structures, 17, 259-271.

Ross, C.T.F. & Palmer, (1993), General instability of swedge-stiffened circular cylinders under uniform external pressure, J. of Ship Res., 37, 77-85.

Ross, C.T.F., (1994), The Silent Submarine, Inaugural Lecture, University of Portsmouth, Portsmouth, UK. http://www.mech.port.ac.uk/CTFR/index.html

Ross, Carl T.F and Lafolley-Lane, G., (1998), A conceptual design of an underwater drilling rig, Marine Technology, Vol. 35, No. “, April.

Ross, Carl T.F., (1999), Mechanics of Solids, Horwood, Chichester, UK,.

Ross, C.T.F., (2001), Pressure Vessels: External Pressure Technology, Horwood Publishing Ltd., Chichester, UK.

Ross, Carl, (2005), Letter to the Editor, The Independent on Sunday, London, UK, 20th February.

Ross, Carl T.F., (2005) Letter to the Editor, The Independent, London, UK, 27th December.

Ross, C.T.F., (2005), A Conceptual Design of an Underwater Missile Launcher, Ocean Engineering, Vol. 32, pp 85-89.

Ross, C.T.F., (2006), A Conceptual Design of an Underwater Vehicle, Ocean Engineering, Vo. 33, 2087-2104.