

MENSUN BOUND

THE SHIP  
BENEATH  
THE ICE

*The Discovery of*  
SHACKLETON'S  
*ENDURANCE*



MARINER BOOKS

New York Boston

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*To my wife Jo  
This one's for you*

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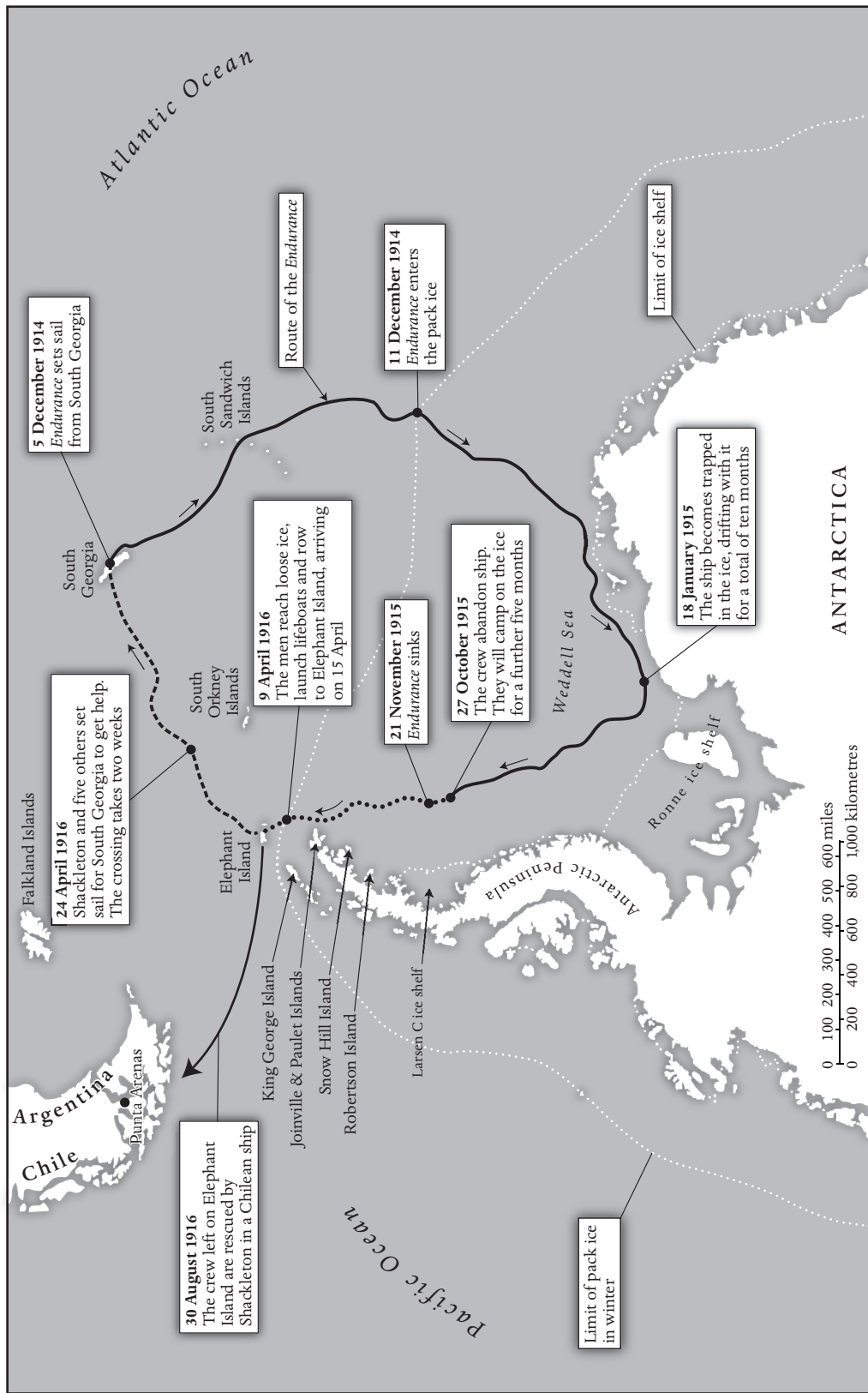
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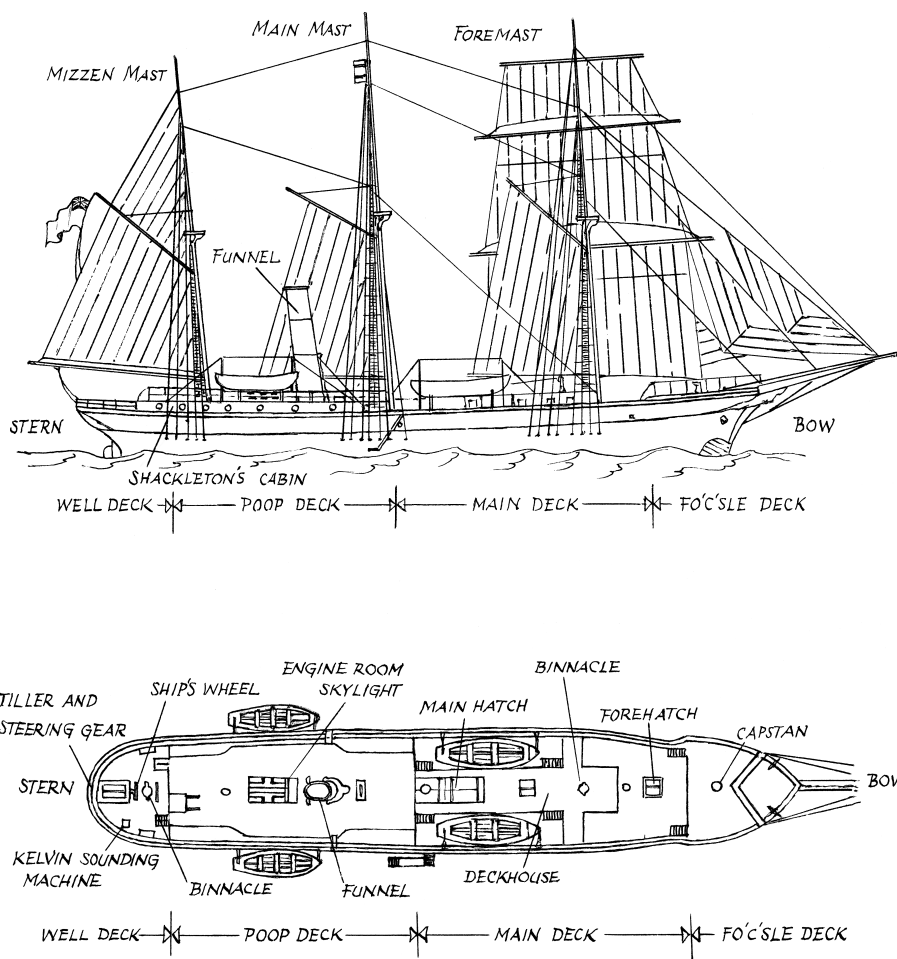


Figure 2. A diagram of the Endurance

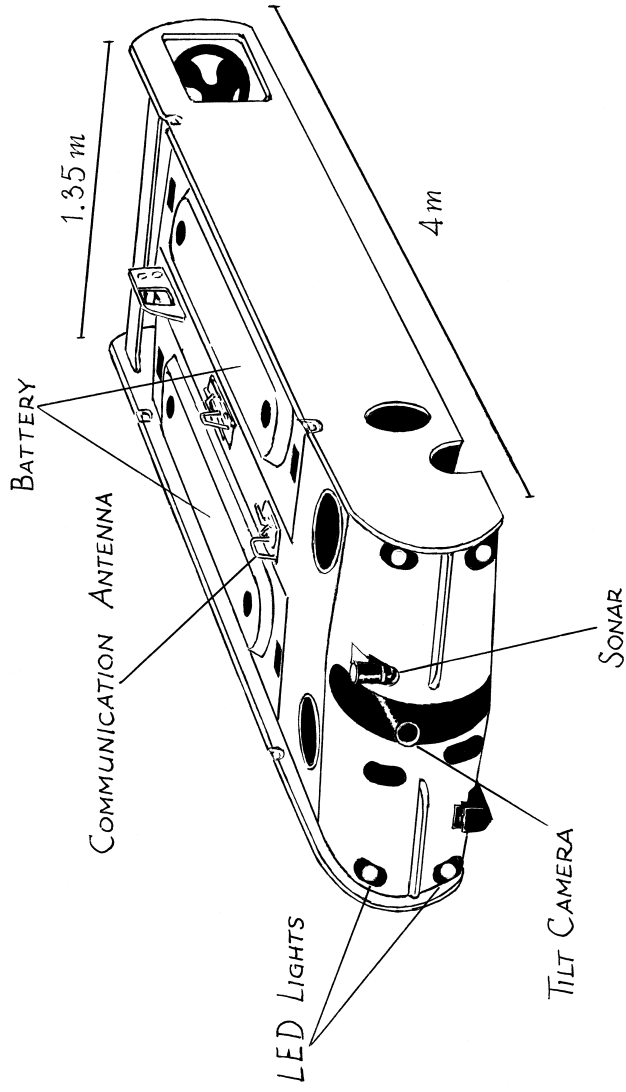


Figure 1. Sabertooth submersible used for the 2022 expedition

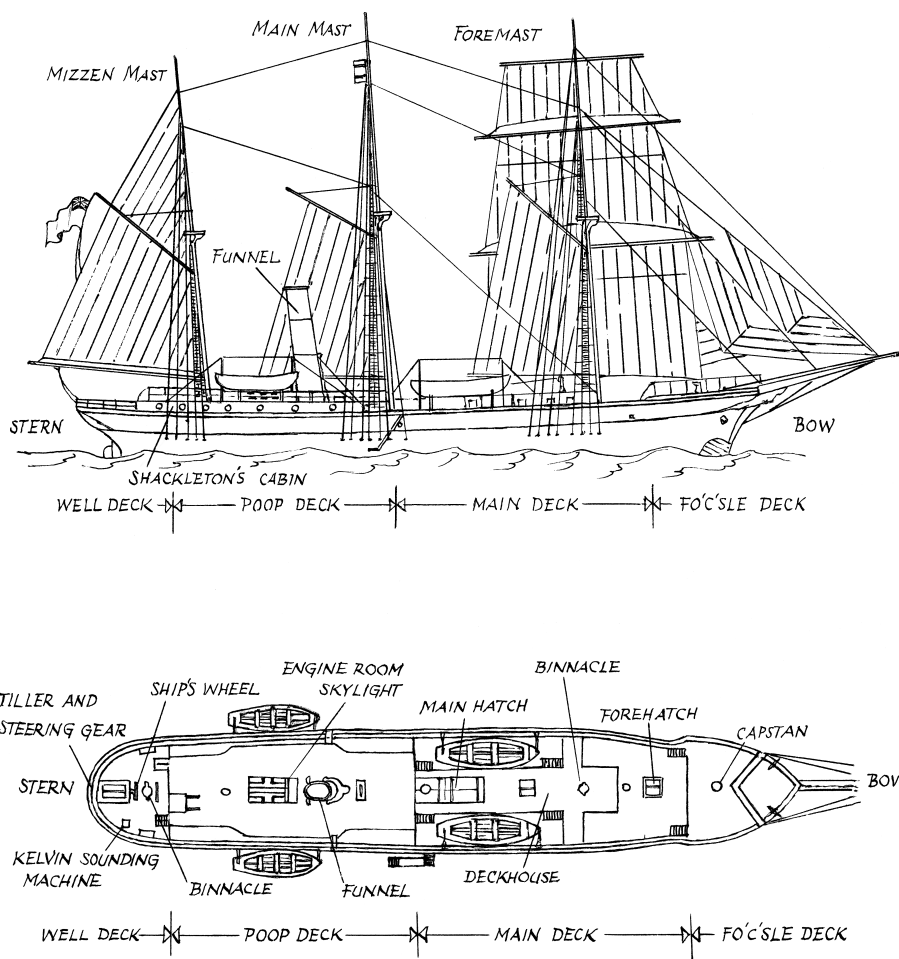


Figure 2. A diagram of the Endurance

# APPENDIX 1

## Members of the Imperial Trans-Antarctic Expedition 1914–17

NAME (AGE AT START OF EXPEDITION)	POSITION	NATIONALITY
Sir Ernest H. Shackleton (40)	Leader	Ireland
Frank Wild (41)	Second-in-command	England
Frank Worsley (42)	Captain	New Zealand
Hubert T. Hudson (27)	Navigational officer	England
Lionel Greenstreet (25)	First officer	England
Thomas Crean (37)	Second officer	Ireland
Alfred Cheetham (48)	Third officer	England
Lewis Rickinson (31)	First engineer	England
Alexander J. Kerr (21)	Second engineer	England
Dr Alexander H. Macklin (25)	Surgeon	England
Dr James A. McIlroy (34)	Surgeon	England
James M. Wordie (25)	Geologist	Scotland
Robert S. Clark (31)	Biologist	Scotland
Leonard D. A. Hussey (23)	Meteorologist	England
Reginald 'Jimmy' W. James (23)	Physicist	England
James 'Frank' Francis Hurley (28)	Official photographer	Australia
George E. Marston (32)	Official artist	England
Thomas H. Orde-Lees (37)	Motor expert and storekeeper	England
Charles J. Green (25)	Cook	England
Harry 'Chippy' McNish (39)	Carpenter	Scotland
Walter Ernest How (28)	Able seaman	England
William Lincoln Bakewell (25)	Able seaman	United States

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Timothy McCarthy (26)	Able seaman	Ireland
Thomas McLeod (40)	Able seaman	Scotland
John Vincent (30)	Able seaman	England
Ernest Holness (21)	Fireman	England
William Stephenson (25)	Fireman	England
Perce Blackborow (19)	Stowaway (later steward)	Wales

## APPENDIX 2

### Members of the Weddell Sea Expedition 2019

#### SENIOR EXPEDITION TEAM

John Shears	Expedition leader	United Kingdom
Mensun Bound	Director of exploration	Falkland Islands/United Kingdom
Professor Julian Dowdeswell	Chief scientist; director of the Scott Polar Research Institute (SPRI), University of Cambridge	United Kingdom
Channing Thomas	AUV and subsea team leader, Ocean Infinity (OI)	United States
Claire Samuel	Offshore manager, Deep Ocean Search Ltd (DOS)	France
Captain Knowledge Bengu	Master of S.A. <i>Agulhas II</i>	South Africa
Captain Freddie Ligthelm	Ice pilot	South Africa
Dr Claire Grogan	Expedition doctor	United Kingdom

#### SCIENTISTS AND ENGINEERS

Professor Sarah Fawcett	Oceanographer and chief scientist, University of Cape Town (UCT)	South Africa
Katherine Hutchinson	Oceanographer, UCT	South Africa
Tahlia Henry	CTD operator and oceanographer, UCT	South Africa
Riesna Audh	Oceanography PhD student, UCT	South Africa
Harry Luyt	Oceanography PhD student, UCT	South Africa

## THE SHIP BENEATH THE ICE

Jessica Burger	Oceanography PhD student, UCT	South Africa
Raquel Flynn	Oceanography PhD student, UCT	South Africa
Shantelle Smith	Oceanography MSc student, UCT	South Africa
Kurt Spence	Oceanography MSc student, UCT	South Africa
Evelyn Dowdeswell	Geologist, SPRI	United Kingdom
Christine Batchelor	Geophysicist, SPRI	United Kingdom
Frazer Christie	Glaciologist and remote sensing analyst, SPRI	United Kingdom
Aleksandr ‘Sasha’ Montelli	Glacial geology researcher, SPRI	Russia
Professor Anriëtte Bekker	Mechanical engineer, Sound and Vibration Research Group, Stellenbosch University	South Africa
James-John Matthee	Mechanical engineering MEng student, Stellenbosch University	South Africa
Christof van Zijl	Mechanical engineering MEng student, Stellenbosch University	South Africa
Tommy Bornman	Elwandle Coastal Node manager, South African Environmental Observation Network	South Africa
Jeff Evans	Senior lecturer in physical geography, University of Loughborough	United Kingdom
Liangliang Lu	Naval architect, Marine and Arctic Technology Research Group, Aalto University, Finland	China
Dag Ottesen	Geologist, Norwegian Geological Survey	Norway
Wolfgang Rack	Glaciologist, University of Canterbury, New Zealand (UC)	Germany

## APPENDIX 2

Paul Bealing	Drone operator, UC	New Zealand
Michelle Taylor	Marine biologist, University of Essex	United Kingdom
Lucy Woodall	Senior marine biologist, University of Oxford	United Kingdom
Betina Frinault	Marine biology DPhil student, University of Oxford	France/United Kingdom
Leon Wuis	Senior sea technician, Royal Netherlands Institute for Sea Research	Netherlands

### AUV AND SUBSEA TEAMS

Chad Bonin	AUV technician, OI	United States
Blake Howard	AUV technician, OI	United States
Devon James	AUV technician, OI	United States
Todd Oxner	AUV technician, OI	United States
Espen Stange	Senior AUV technician, Kongsberg Maritime	Norway
Pierre Le Gall	Survey data analyst, DOS	France
Julien Trincali	Survey data analyst, DOS	France
Steven Saint Amour	ROV team leader, Eclipse	United States
Ray Darville	ROV technician, Eclipse	United States
Steven March	ROV pilot, Eclipse	United States
Dave O'Hara	ROV pilot, Eclipse	United Kingdom

### OTHER SPECIALISTS

Holly Ewart	Project manager, OI; representative of the Flotilla Foundation	United Kingdom
Colin de la Harpe	Team leader, South African Council for Industrial and Scientific Research	South Africa
Tim Huseyin	IT technician, OI	United Kingdom

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Thapi Magabutlane	Meteorologist, South African Weather Service	South Africa
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DOCUMENTARY TEAM

Olive King	Location director	United Kingdom
Paul Williams	Cameraman	United Kingdom
Kobus Loubser	Assistant cameraman	United Kingdom
Tamara Stubbs	Sound technician and drone operator	United Kingdom

## APPENDIX 3

### Members of the Endurance22 Expedition 2022

#### SENIOR EXPEDITION TEAM

John Shears	Expedition leader	United Kingdom
Mensun Bound	Director of exploration	Falkland Islands/United Kingdom
Nico Vincent	Expedition subsea manager, Deep Ocean Search Ltd (DOS)	France
Dr Lasse Rabenstein	Chief scientist; Drift+Noise Polar Services	Germany
Jean-Christophe 'JC' Caillens	Offshore manager, DOS	France
Carl Elkington	Ice camp manager, White Desert	South Africa
Michiel Swanepoel	Helicopter operations manager, Ultimate HELI	South Africa
Natalie Hewit	Documentary director, Little Dot Studios	United Kingdom
Captain Knowledge Bengu	Master of S.A. <i>Agulhas II</i>	South Africa
Captain Freddie Ligthelm	Ice pilot	South Africa
Dr Lucy Coulter	Expedition doctor	United Kingdom

#### SCIENTISTS AND ENGINEERS

Marc De Vos	Senior meteorologist / oceanographer, South African Weather Service	South Africa
Carla-Louise Ramjukadh	Meteorologist / oceanographer, South African Weather Service	South Africa

## THE SHIP BENEATH THE ICE

Professor Jukka Tuhkuri	Senior ship engineering scientist; professor in solid mechanics at Aalto University	Finland
Christian Katlein	Sea ice scientist, Alfred Wegener Institute for Polar and Marine Research	Germany
Stefanie Arndt	Sea ice scientist, Alfred Wegener Institute	Germany
Jakob Belter	Senior sea ice scientist, Alfred Wegener Institute	Germany
Beat Rinderknecht	Science technician, Drift+Noise	Switzerland
Alexandra Stocker	Sea ice science student, Drift+Noise	Switzerland
Mira Suhrhoff	Sea ice science student, Drift+Noise	Germany
Thomas Busche	Senior remote sensing manager, German Aerospace Center	Germany
Dmitrii Murashkin	Remote sensing sea ice specialist, German Aerospace Center	Russia
Anriëtte Bekker	Mathematical statistician, Stellenbosch University	South Africa
Ben Steyn	Ship engineering MSc student, Stellenbosch University	South Africa
James-John Matthee	Mechanical engineering scientist, Stellenbosch University	South Africa
John Albertson	Marine archaeologist, SEARCH Inc.	United States

### AUV AND SUBSEA TEAMS

Chad Bonin	AUV supervisor, Ocean Infinity (OI)	United States
Robbie McGunnigle	AUV pilot and technician, OI	United Kingdom
Joe Leek	AUV pilot and technician, OI	United Kingdom
Maeva Onde	Senior surveyor, DOS	France

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Clément Schapman	Senior surveyor, DOS	France
Pierre Le Gall	Data processor, DOS	France
François Macé	Senior surveyor, DOS	France
Fred Soul	Data processor, DOS	France
Jérémie 'Jim' Morizet	Subsea survey engineer, DOS	France
Kerry Taylor	AUV supervisor, DOS	United Kingdom
Grégoire Morizet	Senior surveyor, DOS	France
Thomas Andreasson	AUV engineer, SAAB	Sweden
Lars Lundberg	AUV engineer, SAAB	Sweden

#### AVIATION TEAM

Warren Vogt	Helicopter engineer	South Africa
Waldo Venter	Helicopter pilot	South Africa
Zakaria Johnson	Helicopter ground team	South Africa
Darius Carstens	Helicopter avionics engineer	South Africa
Eduan Teich	Helicopter engineer	South Africa
Jodi Brophy	Helicopter engineer	South Africa
Charles Tait	Chief helicopter pilot	South Africa
Scott Barnes	Helicopter pilot	South Africa
Buzz Bezuidenhout	Helicopter pilot	South Africa
Timothy Hughes	Helicopter engineer	United States
Michael Patz	Helicopter engineer	United States
Chad Halstead	Helicopter pilot	United States
Kevin Brashar	Helicopter pilot	United States

#### WHITE DESERT ICE CAMPS TEAM

Emmanuel Guy	Ice camp first aider	France
Grant Clark	Field guide	South Africa
Tom Ross	Field guide	South Africa
Chad Burt	Field guide	South Africa

## THE SHIP BENEATH THE ICE

Grant Brokensha	Field guide	South Africa
Wayne Auton	Field guide/paramedic	United Kingdom
Nicholas Burden	Camp leader	South Africa

### MEDIA AND EDUCATIONAL OUTREACH

Dan Snow	History broadcaster	United Kingdom
Esther Horvath	Expedition photographer, Alfred Wegner Institute	Hungary
Nick Birtwistle	Producer, Little Dot Studios	United Kingdom
James Blake	Aerial cameraman, Little Dot	United Kingdom
Paul Morris	Producer, Little Dot	United Kingdom
Saunders Carmichael-Brown	Presenter, Little Dot	United Kingdom
Tim Jacob	Education outreach coordinator, Reach The World	United States
Frédéric Bassemayousse	Expedition photographer	France

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## SELECTED SHACKLETON BIBLIOGRAPHY

- Alexander, Caroline, *The Endurance: Shackleton's Legendary Antarctic Expedition* (Alfred A. Knopf, 1998)
- Bakewell, William Lincoln, *The American on the Endurance: Ice, Seas, and Terra Firma* (Dukes Hall Publishing, 2004)
- Baughman, T. H. and Rosove, M. H. (eds.), *Rejoice My Heart: The Making of H. R. Mill's The Life of Sir Ernest Shackleton* (Adélie Books, 2007)
- Begbie, Harold, *Shackleton: A Memory* (Mills & Boon, 1922)
- Bickel, Lennard, *In Search of Frank Hurley* (Macmillan Australia, 1980)
- Bickel, Lennard, *Shackleton's Forgotten Men: The Untold Tragedy of the Endurance Epic* (Pimlico, 2001)
- Butler, Angie, *The Quest for Frank Wild* (Jackleberry, 2011)
- Butler, Angie and Riffenburgh, Beau, *Shackleton's Critic: The Life and Diaries of Eric Stewart Marshall* (Jackleberry, 2020)
- Cockram, Roy, *The Antarctic Chef: The Story of the Life of Charles Green* (Southampton, 1999)
- Credland, Arthur G. (ed.), *Charles Green: The Antarctic Chef* (East Yorkshire Local History Society, No. 60, 2014)
- Dunnett, Harding McG., *Shackleton's Boat; The Story of the James Caird* (Neville & Harding, 1996)
- Fisher, Margery and Fisher, James, *Shackleton* (Barrie Books, 1957)
- Huntford, Roland, *Shackleton* (Abacus, 1996)
- Hurley, Frank, *Shackleton's Argonauts* (Angus & Robertson, 1948)
- Hussey, Leonard, *South with Shackleton* (Sampson Low, 1951)
- Jara, Mauricio F., Mancilla, Pablo G., *Rescate en la Antártica: Comisi  Piloto 2  Luis Pardo Villal n en 1916; H roe Popular* (LW Editorial, Fundaci n Valle Hermoso, 2019)

## THE SHIP BENEATH THE ICE

- Lansing, Alfred, *Endurance: Shackleton's Incredible Voyage* (Hodder & Stoughton, 1959)
- Larson, Edward J., *An Empire of Ice: Scott, Shackleton, and the Heroic Age of Antarctic Science* (Yale University Press, 2011)
- McElrea, Richard and Harrowfield, David, *Polar Castaways: The Ross Sea Party (1914–17) of Sir Ernest Shackleton* (McGill-Queen's University Press, 2004)
- Mill, Hugh Robert, *The Life of Sir Ernest Shackleton* (William Heinemann, 1923)
- Mills, Leif, *Frank Wild* (Caedmon of Whitby, 1999)
- Piggott, Jan (ed.), *Shackleton: The Antarctic and Endurance* (Dulwich College, 2000)
- Richards, R. W., *The Ross Sea Shore Party, 1914–17* (Scott Polar Research Institute, 1962)
- Shackleton, Ernest, *The Heart of the Antarctic* (William Heinemann, 1910)
- Shackleton, Ernest, *South* (William Heinemann, 1919)
- Smith, Michael, *An Unsung Hero: Tom Crean – Antarctic Survivor* (Collins, 2009)
- Smith, Michael, *Polar Crusader: A Life of Sir James Wordie* (Birlinn, 2007)
- Smith, Michael, *Shackleton: By Endurance we Conquer* (Oneworld Publications, 2014)
- Summers, Julie, *The Shackleton Voyages* (Weidenfeld & Nicolson, 2002)
- Taaffe, Seamus, *Nimrod: The Journal of the Ernest Shackleton Autumn School* (Athy Heritage Centre–Museum, 2008)
- Thomson, John, *Elephant Island and Beyond: The Life and Diaries of Thomas Orde-Lees* (Bluntisham Books, 2003)
- Thomson, John, *Shackleton's Captain: A Biography of Frank Worsley* (Hazard Press, 1998)
- Tyler-Lewis, Kelly, *The Lost Men: The Harrowing Story of Shackleton's Ross Sea Party* (Bloomsbury, 2006)
- Webster Smith, Bertie, *Scott of the Antarctic* (Blackie & Son, 1955)
- Wild, Frank, *Shackleton's Last Voyage* (Cassell & Co., 1923)

## SELECTED SHACKLETON BIBLIOGRAPHY

- Wöppke, C. L. and Jara, M. F., *El Piloto Luis Pardo Villalón: Visiones desde la prensa, 1916* (LW Editorial, Fundación Valle Hermoso, 2016)
- Worsley, Frank, *Endurance: An Epic of Polar Adventure* (P. Allan, 1931)
- Worsley, Frank, *Shackleton's Boat Journey* (P. Allan, 1933)
- Wright, Joanna (et al.), *South with Endurance: Shackleton's Antarctic Expedition 1914–1917* (Book Creation Services, 2001)