

England Rifle Team

South Africa 2009





England Rifle Team

Captain:	Tom Rylands (SC)	Cheshire
Vice Captain:	Andrew Lothian*	Surrey
Adjutant:	Derek Lowe*	Surrey
Main Coach:	Nick Tremlett	Berkshire
Target Coach:	Mathew Ensor*	Surrey
Target Coach:	David Richards (GM, SC)	Hampshire
Target Coach:	Bill Richards*	Surrey

Shooters:

Mary Boston*	Lincolnshire	David Rose*	Surrey
David Dyson	Yorkshire	Paul Sykes*	Sussex
Holly Foster	Norfolk	Jon Underwood (GM, GC, SM)	Surrey
James Lothian*	Surrey	James Watson	Northants, Leics & Rutland
David Luckman (GC, SM, SC2)	Somerset		
Jane Messer (GC, SC)	Sussex	John Webster	Cheshire
Stuart O'Brien*	Cheshire	Andrew Wilde	Somerset
Parag Patel (GC2, SC)	Surrey	Alex Williams	Cambridgeshire
Stephen Penrose	Essex	Stuart Young*	Lancashire

* First England Touring Cap

Itinerary

Weds 18 th March	Main party travel from Bisley to Heathrow. Flight to Johannesburg
Thurs 19 th March	Main party arrives at Johannesburg. Drive to Nottingham Road
Fri 20 th March	Rest Day
Sat 21 st March	Match vs Kwazulu Natal at Merrivale Range
Sun 22 nd March	Individual practice at Nottingham Road Range (am) Team match at Nottingham Road Range (pm) Late party leaves Bisley. Flight to Johannesburg
Mon 23 rd March	Late party arrives at Johannesburg Both parties drive to Bloemfontein
Tues 24 th March	Zeroing (300m) & Pairs Match @ 300, 600 & 800m
Weds 25 th March	Free State Championship @ 300, 600, 800 & 900m
Thurs 26 th March	80 th Anniversary match 1 st Stage Short Range Individual @ 300, 500 & 600m 80 th Anniversary match 1 st Stage Short Range Team @ 300, 500 & 600m (pm)
Fri 27 th March	80 th Anniversary match 2 nd Stage Long Range Individual @ 800 & 900m (am) 80 th Anniversary match 2 nd Stage Long Range Team @ 800 & 900m (pm)
Sat 28 th March	Scottish Sword Individual @ 300 & 900m (am) Dewar Shield Team @ 300 & 600m (pm)
Sun 29 th March	Rest Day
Mon 30 th March	Orange Free State Cup Individual @ 300, 500 & 600m (am) Hamilton Cup Team @ 300, 500 & 600m (pm) Fundraising Dinner at Lettie Fouché School
Tues 31 st March	Dalrymple & Dave Smith Cups Individual @ 300, 600 & 900m (am) Rhodes Cup Team @ 800 & 900m (pm)
Weds 1 st April	State President's 1 st Stage & Municipal Cup Ind. @ 300, 500, 600, & 800 (am) RSA International Match Team @ 800 & 900m (pm)
Thurs 2 nd April	Jack Mitchley, Kings Norton, President Cup @ 300 & 600m President's Cup & Col. R Bodley Memorial Ind. @ 800 & 900m
Fri 3 rd April	State President's 2 nd Stage Individual @ 300, 500 & 600m (am) Protea Match Team @ 300, 600 & 900m (pm)
Sat 4 th April	State President's Encouragement Match Individual @ 300, 600 & 900m (am) State President's Final Individual @ 800 & 900m (pm)
Sun 5 th April	Drive to Johannesburg. Flight back to Heathrow.
Mon 6 th April	Arrive Heathrow. Travel back to Bisley.



H.R.H The Duke of Edinburgh
Patron, English Twenty Club



BUCKINGHAM PALACE.

To be selected to represent your country in international sporting competitions must be the ambition of all talented competitors. I am delighted to have this opportunity to offer my congratulations and best wishes to the members of the English Twenty Club who have been selected to compete in the International Protea Match in South Africa. This match has the reputation for being highly demanding, and I wish them every possible success.

Competition may be the primary reason for visiting South Africa, but competition is also a splendid opportunity to meet other enthusiasts in target rifle shooting and to forge new friendships. I have no doubt at all that memories of the experience will be savoured by every member of the team for many years to come.

A handwritten signature in dark ink, appearing to read 'Philip', with a large, stylized initial 'P'.



What a year it is in the history of the South African Bisley Union! We will be conducting the 73rd SA Open Championships, but more importantly, we will also celebrate the 80th Anniversary of the South African Bisley Union.

As the Chairman of SABU, I would like to welcome the England Rifle Team competing in the 80th Anniversary Matches and SA Open Championships. I wish you all an enjoyable and successful meeting.

Further to the above, on behalf of SABU, I would also like to thank the National Rifle Association of the UK for the big role they have played in the history of SABU.

Thank you for celebrating our 80th Anniversary with us.

BERNAND DE BEER

Chairman of SABU



On behalf of the English Twenty Club and its members, may I wish every success to Tom Rylands and the England Rifle Team travelling to South Africa to participate in the 80th anniversary of the South African Bisley Union Championships at Bloemfontein during March/April 2009.

This Open Meeting will prove to be of particular significance both in terms of its celebrating a long history of full-bore rifle shooting in South Africa and also because all the Home Countries will be represented. The Club is proud to be able to field such a strong England team under his leadership, which should provide the opposing teams with very stiff competition, and every chance of an English victory in the Protea Match.

Good shooting and good luck!

A handwritten signature in black ink, reading 'Richard Horrocks' in a cursive style.

Dick Horrocks

President, The English Twenty Club



Tom Rylands
Team Captain

It is a great honour and huge privilege to be asked to captain one's country and I am extremely grateful to the English Twenty Council for the opportunity they have given me and indeed the faith they have put in me! South Africa has always had a special place in my heart; my very first travels with a rifle were here in 1984, with a goodwill team to shoot on Hamilton Ranges. I well remember the tented accommodation and the sounds of the railway marshalling yard at night!

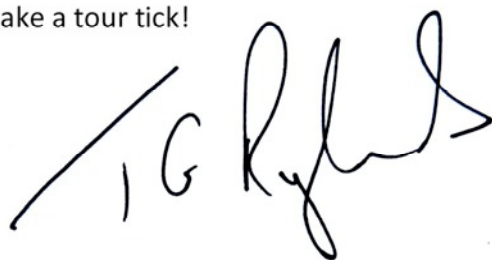
My memories of the competition are less good, but as an Under 25 (yes I was one once!) I remember the standard of shooting was extremely high. And that is what has continued to draw 'shottists' to Bloemfontein over the years. It is difficult to beat any team on their home soil, but I have always felt that shooting in South Africa against South Africa is especially so.

One of my most memorable trips was in 1993, with the Great Britain Team under Bob Stafford; in fact several members of that team will be in Bloemfontein again, as part of what will be one of the largest contingents of overseas visitors to compete at the S A Bisley. We learnt then what pride, passion and determination is generated amongst the South African Team for the Protea!

This year promises to be even more challenging and it is wonderful that each of the 'Home Nations', along with Australia, The United States, Channel Islands, Germany and others have sent Teams. I look forward to some very stiff competition and not a little rivalry!

I would like to express my thanks to all those people who have helped to make our trip happen. It is no mean task to organise such a large event and it has been made so much easier by the assistance we have received from SABU, its officers, and its staff.

I would like to thank our advertisers and sponsors who are acknowledged elsewhere in the brochure and particular thanks go to my Vice – Captain, Andrew Lothian and my Adjutant, Derek Lowe; both have been absolute stalwarts and kept the captain from wandering off too much! I know from experience how much 'behind the scenes' work is required to make a tour tick!

A handwritten signature in black ink, appearing to read 'T. G. Rylands', with a long diagonal stroke at the beginning.

Tom Rylands

Team Captain



Thomas Hardie



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General de Wet Range, Bloemfontein

The General de Wet ranges are located just outside Bloemfontein and host the SABU 'Bisley' Meeting each year in March / April – in the South African autumn so the weather is generally hot. The ranges occupy a large open flat expanse of land with very few trees, which make for 'interesting' conditions although they are consistent across the range. Bloemfontein weather is somewhat unpredictable and there are days when you get to see 'four seasons in one day'.

Shooting in the South African Bisley is a unique experience. It always starts with a bible reading and prayers by the Chief Range Officer Brigadier General Mac Alexander. The fellowship this engenders runs throughout the day and the friendship and good humoured competition is something very special. Regular visitors are attracted from as far afield as Australia, America, Great Britain and Europe as well as a few stalwarts still from Zimbabwe, and of course a good few from Namibia.



Nottingham Road Range, KwaZulu-Natal

The Nottingham Road Rifle Club's range is situated on private farmland just outside the village of Nottingham Road in the KwaZulu-Natal Midlands. The clubhouse and access to the firing points and butts has been bequeathed in perpetuity by the previous landowner and Club Chairman Dave Nicol. The area is very like England, with lush green fields, forestry and in some places fairly mountainous terrain.

The range nestles into some hills with 10 targets and has a trout dam stretching between the 300m and 600 yard firing points, the latter actually on the dam wall. The range is entirely grassed with firing points at various distances although virtually none are at an exact multiple of 100yards. Locals say they gauge the wind from the ripples on the water.

The Club has a great history and a large clubhouse which has several rooms and of course a bar.

British Teams in South Africa

My first visit to Africa was as part of Robert Stafford's team to South Africa and Zimbabwe in 1993. Robert's stated aims for the team were to be good ambassadors for GB shooting and to consolidate links for the future, to shoot well and win matches and last but not least, to introduce his young team to Africa and its wildlife. The former was important as we were the first official GB team to visit South Africa since 1963 (a goodwill English 'Lions' team under John Killian had visited the previous year to celebrate the end of Apartheid and the lifting of sanctions including restrictions on sporting teams). The latter was covered by the ten days following shooting in Bloemfontein that we spent on safari north of Durban and around the Victoria Falls and Lake Kariba. We were defeated by South Africa in the Short and Long range matches on the new General de Wet ranges near Bloemfontein but managed to salvage the record by winning the three way match against South Africa and Zimbabwe on the Cleveland range at Harare at the end of our tour. And it is testament to the warmth and friendliness of the welcome that we received in 1993 that many of us have made several repeat visits since then, and three of the 1993 team are also on the 2009 England team, including Tom Rylands, the 2009 Captain.



The first British team visited South Africa in 1920-21, a comparatively late date, given that South African 'shottists' had been coming to Britain to compete at Bisley since 1905 or even earlier. Originally, it had been intended to send a team in 1914, but the First World War caused it to be delayed until 1920. The team, captained by the renowned Bisley shot Lt Col P.W. Richardson, had already spent several weeks on tour in Australia. The team arrived in Durban on 21st December 1920, but due to changes in ship schedules sailed early from Cape Town for England on 5 January 1921. In between, the team travelled 2,500 miles and fired five matches, at Pietermaritzburg (against Natal), Booyens range, Johannesburg, (against Transvaal and Transvaal Dutch teams), Hamilton Range, Bloemfontein, (against Orange Free State) Currey Ranges, Kimberley (against Griqualand West) and Woltemade Range, Cape Town (against Cape Colony). Christmas Day was spent in Johannesburg, strolling around the town, visiting the Zoological Gardens and at the Christmas dance at the Country Club.

The team accounts, published in the NRA Journal, are interesting: the entire tour, including the steamship fares and the tour in Australia, cost £3,131, 13s & 7d. The team was funded through contributions to the Australian Team Fund, the list of subscribers being headed by HM the King and including such other notables as Lt Col P.W. Richardson O.B.E., Col Howard Wilkinson, Lord Cottesloe, Col Henry Mellish C.B., Henry Whitehead, M.V.O., A.P. Humphrey, M.V.O., Major T. Ranken, Admiral G. Northland, Col J. Hopton, J.P. Renshaw, all of whose names are known to us through the trophies commemorating them.



In 1937 Commander Swanston's celebrated GB team to Australia and New Zealand, which spent five months on tour and was the last GB team to travel entirely by ship, stopped in South Africa for a month en route to Australia. Landing in Cape Town in November, the team travelled up to Johannesburg, practised at Booysens Range and then travelled on to Quaggapoot Range, Pretoria for a match against Witwatersrand, Pretoria United Services, Eastern Transvaal and Western Transvaal; then back to Booysens for a match against Transvaal; and on to Durban for matches on the Athlone and Natal Carbineers' (Chase valley) ranges against Natal. The team then travelled to Bloemfontein and shot against Orange Free State on Hamilton Range.



—THE BRITISH RIFLE TEAM—
SOUTH AFRICA, AUSTRALIA & NEW ZEALAND, 1937-38

R. Fulton R.R. (7)	E. A. F. Widdington Rt. Insp. Dragoon Gds.	P. R. T. Garnett Late Insp. of Court	R. D. Greig Late Winchester Coll. O.T.C.	C. W. Seward Late Oxford Univ. O.T.C.	L. E. Huddle Late London Univ. O.T.C.	C. L. Hall Late Oxford Univ. O.T.C.
D. L. Harvey Late Camd. Univ. O.T.C.	Capt. R. E. W. Johnson London Rifle Brigade	J. L. Milne Late R.A.	Comdr. D. S. Swanton Late Royal Navy	Maj. A. J. Andrews Tower Hamlets	C. K. Lahan Royal Navy	N. W. McCaw Late Westminster School O.T.C.

Following a Sunday off (spent by the team at Mazelpoot and the Modder River), the first International Match to be held in South Africa was held on Hamilton Range. South Africa, captained by Col R. Bodley, won the match by a 30 point margin, with a Southern Rhodesia team coming second and Great Britain a rather disappointing last. The British account of the match is entertaining because it demonstrates that some things, such as reasons for losing matches, haven't changed very much over the years:

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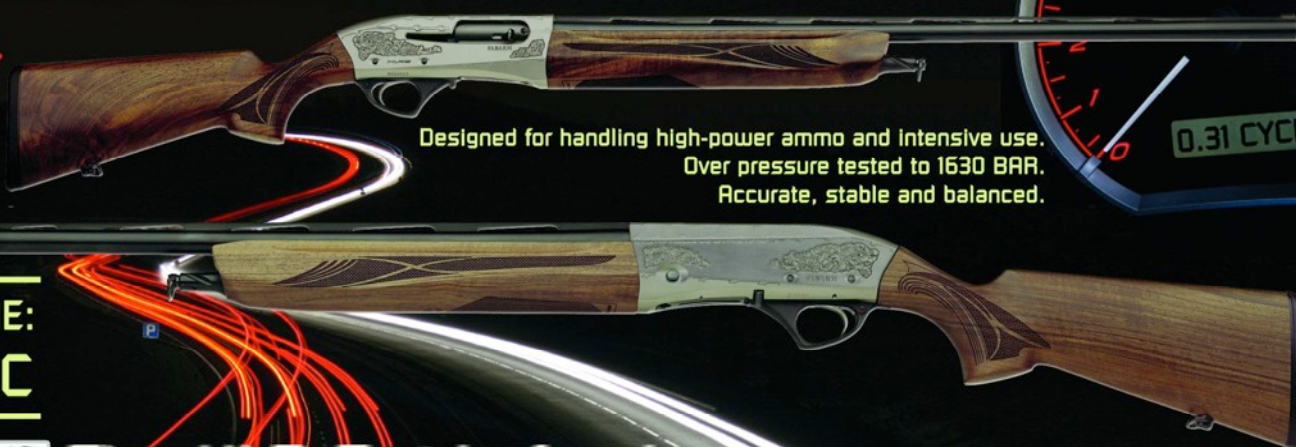
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"At 500yards Hoddle discovered loose screws after his first counting shot (a magpie)...Our troubles continued at 600yards. Hoddle's P14 did not respond to treatment and was not used on tour again. Fulton discovered himself to be shooting through a half closed aperture...There was a welcome improvement in our shooting at long range, though McCaw lost points by setting his sight the wrong way at 1,000 yards".

The 1937 GB tour of South Africa concluded with a small prize meeting at Grahamstown and matches against Eastern Province in East London and Western Province at Woltemade range near Cape Town (the latter in a triangular match also against the country team using Long Lee Enfield rifles). The team then embarked on the SS Ascania at Cape Town, arriving in Durban three days later for coaling, before finally sailing for Fremantle. Reflecting upon the South African tour, the team commented that "The shooting was remarkable for the number of close matches... We might well have felt satisfied with these results if we had made a better showing in the Test [International] Match because the standard of marksmanship in South Africa is acknowledged to have no superior in the Empire...It is difficult to find words adequate to convey an impression of the wonderful welcome and hospitality accorded to us throughout the country."

The next GB team to tour Africa, in 1953, was captained by Major T Ansty. Team members included Marjorie Foster (vice captain), Rear Admiral Hutton, Lieut A.G.Fulton (father of Robin Fulton, who had been the baby of the 1937 team, celebrating his 19th birthday while on tour), Capt. H J Orpen-Smellie and Lord Swansea. The team flew into Khartoum, shooting there, followed by Kitwe, Mufulira, N'Changa, Luanshya, and Salisbury (now Harare). The latter included the Rhodes Centenary Trophy, an International match under Kolapore conditions against South Africa (who won), Southern Rhodesia (now Zimbabwe), Northern Rhodesia (now Zambia) and Nyasaland (now Malawi). GB turned the tables in South Africa, winning the subsequent International match against South Africa held on Hamilton Range, Bloemfontein, before most of the team sailed home.

The 1963 GB team to Africa, captained by Stan. Wheeler, also featured a Fulton. This time it was Robin Fulton, along with other well known shots including David Horton-Smith, George Arnold, Keith Pilcher and David Scott Langley (father of Jeremy Langley, who first toured to South Africa with the 1993 GB team).



GREAT BRITAIN RIFLE TEAM TO AFRICA 1963

G. F. Arnold.	R. H. Jennings.	R. S. Hasell.	I. A. McClure.	A. J. Clark.	R. A. Fulton.	R. W. Fisher.
R. F. Finch.	D. A. G. Horton-Smith.	S. F. Wheeler.	D. L. S. Langley.	K. P. Lewis.		
	(Vice Capt.)	(Capt.)	(Lieut.)			
	A. C. Grant.	B. I. J. Gilson.	K. M. Pilcher.			

The team shot first in Kenya, Northern and Southern Rhodesia, before travelling to Bloemfontein, via Johannesburg and some sightseeing, (including a 24hour flying visit to Durban!). The team competed on Hamilton Range in the South African national competitions, followed by the Rhodes Centenary Match and International Test Match, fired concurrently to save time, with South Africa winning by 1 and 4 points respectively. This team was also notable for being the first to return to Britain by air, on a BAOC Comet that stopped three times en route, at Nairobi, Khartoum and Cairo.

Following the 1993 GB tour, team – and individual – visits to South Africa have proliferated. In 1994, the first British Service Rifle team was taken to South Africa by WgCdr Mike Gregory. This was followed by the first RAF team in 1996, captained by Sdn Ldr Chris Fitzpatrick. In 1997 a Black Powder Rifle Team visited and in 1998 a CCRS Youth Team travelled. Also in 1998, Andy Chown captained a full GB team, which won the short range of the Protea match, while South Africa won the long range. In 1999 the Palma Match was held at Bloemfontein, attracting teams from Great Britain, the US, Canada, Zimbabwe, Australia. Great Britain also sent its first Veterans team captained by Richard Britton, and an Under 19 team. Under 19 teams have been visiting South Africa regularly since then and the U19 team to South Africa has become an established and important part of the development of our young shooting talent, from cadet and schools shooting, through the Athelings and U19 to SA teams, to University and Under 25 team shooting. An Under 25 team, captained by Erica McMullan, toured Africa in 2004 and the first GB Army TRC team, captained by Lt. Col. Chris Claridge, travelled out in 2005.

In 1995 the English XX Club sent the first England team abroad, to Canada. The first England team to South Africa was in 2004, captained by Dick Horrocks. The 2009 England team will hope to capitalise on the success of Steve Thomas's 2008 GB team, which was the first GB team to South Africa to win all the international matches against South Africa on South African soil. Several members of the 09 England team were also on Steve's GB team – and other members of the 08 GB team will be part of the Irish, Scottish and Welsh teams who are also travelling out to celebrate the SABU 80th Anniversary with South Africa. We look forward to a challenging and friendly competition and hope that this, the largest ever contingent of GB shooters to visit South Africa, will continue to build our strong shooting links.

My thanks to Eric McGibbon and Ted Molyneux at the NRA Museum for their assistance with the research for this article.

Jane Messer, January 2009



The Lettie Fouché School for Mentally Handicapped Children

The England rifle team is very pleased to join with the other visiting teams in supporting the Lettie Fouché School, which caters for 240 children aged between 3 and 18 with serious mental disability. Founded in 1953, the school serves pupils from across South African society around Bloemfontein and the Free State, including 70 boarders from rural areas. The school is in continual need of funding in order to provide the best possible facilities in helping pupils develop the life skills and practical skills they need in order to take a full part in society. The school also funds places for 60 pupils whose families are not able to contribute towards the financial cost of their care.

The overseas rifle teams are fundraising for the Lettie Fouché School via a number of initiatives, including a dinner to be held at the school during the South Africa Bisley Union's 80th Anniversary championships. This will also act as a thank-you to our South African hosts, whose hospitality, sportsmanship and generous help make these championships such a popular event among international shooters each year.

We hope you will be able to join us in supporting the school. If you would like to donate to the school, please approach any member of the England team or contact the school direct:



The Headmaster
Lettie Fouché School
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Danhof 9310
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South Africa

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Tom Rylands

Tom is no stranger to South Africa, his first tour being way back in 1984. Frighteningly this was before some members of this team were born!! In fact he has fond (?!) memories of tented accommodation in snow, hail and torrential rain on Hamilton Range!

He returned with GB Teams in 1993, 98 and 99 (Palma), winning the Zimbabwe Grand and Presidents in 93 and two individual Golds in the World Championships in 99; he has also toured to Australia, Canada and latterly USA with John Webster's England Team last September.

Tom has enjoyed several individual successes over the years, but his love is for team shooting and he has represented GB in Palma, Australia and Kolapore Matches, as well as England in the National, MacKinnon and Elcho Matches and most recently in the 2008 America Match.

He is currently chairman of the English Twenty Club and is delighted and honoured to be returning to Bloemfontein ten years on as Captain of England.



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Andrew Lothian



Andrew is the team's Vice-Captain. This will be his first overseas tour since 1995 when he was a member of the winning G.B. Palma team, and his first England tour. The senior Lothian family member of the team, Andrew, like so many others, began his shooting career at Epsom College where he was a member of its first ever Ashburton winning VIII. An Atheling in 1973 (thirty three years before his son James), he first met "Webbie" in 1974 when they shot for the UK cadets in the A.G.Bell. Andrew has won the St George's Silver Cross, the Alexandra, a couple of Grand Aggregate crosses and a handful of Queen's final badges. He has shot for Surrey for some twenty years and has always considered himself first and foremost a team shot, on and off the ranges. He just wishes he could have seen the wind changes back in the days when he could see!

He recently got involved in cadet shooting through his son James, who also attended Epsom. He now gets a real kick out of helping and encouraging young shooters - the future of our sport.

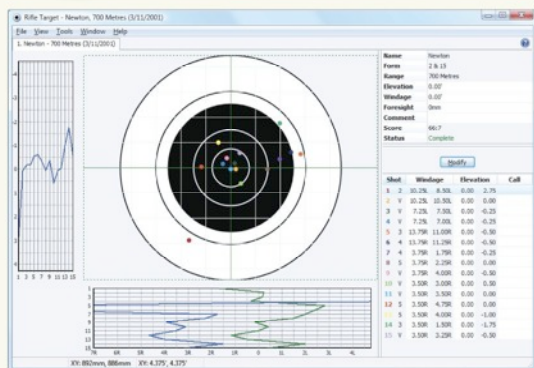
Andrew knows his way to Johannesburg from Heathrow quite well. He is a captain flying Boeing 747's for Virgin Atlantic and is looking forward to seeing rather more of South Africa than just Sandton City. He leaves behind Alison, his long suffering wife, to look after Tom, James' younger brother, who also knows one end of a rifle from another but would rather play a game with an oddly shaped ball and H shaped goal posts.

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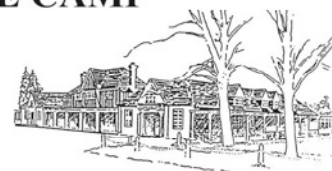
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Derek Lowe

Derek is delighted to be touring with two of what he ambitiously considers his contemporaries from RGS Guildford - Jon Underwood, who helped teach him to shoot, and Matt Ensor, who was a lot smaller then than he is now. This tour is Derek's first representing England, fifth to Africa and sixth at senior international level. It is ten years since he last toured to South Africa - on GB's Palma team - unless you count popping into Cape Town for lunch in 2004 after the Namibian championships. The "Adj" is very much looking forward to shooting in South Africa again, especially as it will take his mind off organising, which has become an occupational hazard of his driving through the gates of Bisley.

Alongside a preference for team shooting, more recently with the Surrey county squad, Derek's individual wins include the Corporation, Conan Doyle and the Surrey Open Championship. With a bias towards longer range, he debuted for England's Match Rifle team in 2006's Elcho and won the Edge in 2007.

Derek has lost count of the years since he left Oxford University Rifle Club for investment banking, which is why he is nowhere near the team's finances. Friends from his church in London have shared Derek's appreciation of Africa when working with partner organisations in Nairobi, but are still yet to believe that his twin penchants for skiing and rifle shooting do not a biathlete make.



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Scatt

Over the last 6 or so years Scatt is a word that has been increasingly heard around Bisley Camp. Anyone who didn't know might wonder what we are talking about but I can assure readers that it is definitely not a "dry film coating for boats" or a "treatment for airsac mites", (just a couple of alternatives that turn up on google)!

Scatt is an electronic shooter training system which is connected to a computer and displays where the shooter is aiming when he/she fires the shot (dry firing only!).

Scatt (CKATT in Russian) has been in development since the 1970's when a Russian electronics engineer and coach of the Russian National team, Oleg Lapkin, was looking for a device to check the accuracy of the shooter's aim. It then consisted of an oscilloscope and an electronic-optical sensor. Training at 50 metres it was possible to record the deflection of a rifle. By 1975, the Soviet Union National Team started using this device. However, they stopped using it in the early 1980's because it was found to be inaccurate and inconvenient.

In 1991 another Russian electronics engineer, Artem Khadzhibekov, who was also an Olympic and World Champion, joined the national team and decided to improve the device created by Lapkin. As a result three engineers, Oleg Lapkin, Artem Khadzhibekov and his friend Yuri Khlynin joined forces with programmers Vladimir Vlasov and Yuri Lapkin (son of Oleg Lapkin) to create the prototype of the Scatt training system. Over the years the Soviet Union and Russian National teams have continued to help improve the system. Currently 80-90% of the best shooters in the world use Scatt.

The Scatt company itself was created in 1993 under the management of Anatoliy Aktov. He left the firm in 1996. That same year Alexander Kudelin (a shooter in the National Team) joined the company. He is currently the director of the business. This information about the development of the Scatt system has been very kindly provided by Alexander Kudelin.



The Scatt system consists of 3 main parts; the detector, the target and the software, plus some cables. The detector is attached to a rifle barrel as shown in the photo and will trace out the precise movements of your rifle on your computer screen when you aim at the target. By default it records the trace for 5 seconds prior to firing the shot and 1 second of follow through, and then attempts to display a prediction of where the shot will hit the target.

It was around 7 years ago GB fullbore teams and individuals were looking for ways to improve their shooting performance. An inspired member of the GB team came across the Scatt system, which was being used in other disciplines, and brought it, together with the experts, to one of our GB team training weekends. Following a fairly short introduction into what the system could do for us, many of us were intrigued to come across a "computer game for shooters!" Well not really, but it does involve computer technology which we all love these days. There was the small draw-back of the price though. For something that costs more than 1,000 rounds of good quality ammunition we were somewhat uncertain as how

worthwhile it would be, so initially we just purchased a couple of them for the whole team to share. This generally meant we only used them when Scatt sessions were arranged, but those of us using them could see the benefits of being able to trace and review your aim pattern, quality of hold and trigger release.

Over the next few years, individuals saw the benefits of being able to train without live ammo, and many invested in the latest version of the Scatt system. We even organised a Scatt training day where we had 12 Scatts working simultaneously.

However, Scatt is probably best used on your own or in small groups as part of a structured plan to improve your performance. The main difficulty for us as fullbore shooters is that we tend to keep our rifles at Bisley, and arranging to have them at home or having to collect and return them just for an evening or a couple of hours at a weekend can be problematic, so some logistical planning is required.



So what sort of benefits can you gain from using the Scatt system?

You can use the system anytime, independent of weather conditions, anywhere as long as you have space, without additional costs of target hire, markers or ammunition. It records a trace of your hold, so instead of seeing the result of your efforts as a hole in a piece of paper which only takes a split second of the process, you have a whole wealth of information as to what you were up to before and after firing the shot. The only thing it can't tell you is the effect of recoil, and you will have to continue to rely on the hole in the paper for that! You can consider it as dry firing practice with feedback, a significant improvement.

The important thing to remember when you are using the system is how you compare it to your current shooting ability. The first time you try it, you will probably just be getting used to using the system and how it works. However, to start with you want to remember to do everything as you would normally out on the range, (apart from loading ammo, use a snap cap instead). When you study your first few traces you need to remember that they should show how you currently fire a shot, assuming that you have kept to your normal procedure. Then when you use the system in future, you have a sample set of data to refer back to.

Once you are used to using the system you should be thinking about and working out how you can improve your performance on the range, what your ideal hold pattern should look like and what you need to do with your equipment or whatever in order to achieve that result. You can then experiment to your heart's content. Test what happens with small changes to position, hand stop position, sling length etc. Even just dry firing will be of benefit to your performance as it keeps your body tuned to firing the perfect shot!



A scatt trace which shows some of the good techniques in the process of firing a shot:

- A short hold "on aim" (green and yellow)
- No movement on trigger release (blue)
- Follow through stays "on aim" (red)

Another great advantage of Scatt is that you can send your traces to friends or anyone who has a PC. The software is freely available and once installed allows you to view anyone's Scatt trace so you can compare yours with your friends or with some of the top shots in the country. You can look for trends and work on trying to eliminate problems. At the end of the day though, it is still down to you as the shooter to work out how to improve and progress and you will still have to put some lead down the range, but maybe not as much.

I have only referred to the Scatt system here, although there are other systems available, I have no personal experience of them.

Jon Underwood, January 2009

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“Good Luck and Good Shooting” to the England Team to South Africa!



Nick Tremlett

Nick has been shooting since it excused him from games at school. He was picked for the Athelings team of 1976, along with 2 other team members, Stephen Penrose, and David Richards. He and Stephen then went to Cambridge to study as vets. He first made a GB team in 1983 and has shot at international level since. During that time he has collected 19 Queens final badges, being 2nd in 2004, and 17 Grand Agg crosses.

Apart from Target Rifle, Nick is also a keen Match Rifle shooter, winning the Hopton 4 times and being the current record holder. He is also the current captain of the English match rifle team.

In recent years Nick has been concentrating on coaching rather than shooting, and has coached the 'Big Five'. He has considerable experience of shooting in South Africa, having been there with the Palma team in 1999, and the GB team in 2006.

Away from shooting Nick is the managing partner of a large veterinary practice in Berkshire, is married to Jo, a doctor with the police, has 2 teenage kids and a cat.

Matthew Ensor

Matthew started shooting in 1992 at the Royal Grammar School, Guildford. As an 11 year-old he watched the "Adj" giving speeches in morning assembly and, seeing that being captain of the school shooting team meant Derek was allowed to wear a rifle pin-badge on his school uniform, decided it was very cool and he wanted to join!

Selection for the Athelings followed in 1997, and on that tour he realised he was less likely to drop his last if he was sitting behind a scope than if lying behind a rifle! His first trip to South Africa was his first GB Under-25 tour in 2000. Years of concentrating on coaching was starting to pay off, and led to more appearances with Surrey from 2004 and England from 2006. This is his first England tour.

In 2007 Matthew received a late call up to the Palma Team, where he gained his first GB cap. He returned to South Africa last year, with Steven Thomas' victorious GB team, and then joined the management of the England Commonwealth Games squad.

Personal shooting highlights so far include most of 2007 and 2008, especially the Palma and Protea Matches themselves. Oh, and he got to wear that pin-badge!



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David Richards

Having recently reached the milestone of his 50th birthday David is now officially 'Over-The-Hill'. He began shooting before most of the team were even glimmers in their parents' eyes; and most of what he learned is regrettably no longer even a distant memory. It is believed that in the dim and distant past David had the occasional good shoot and that he was once lucky enough to win HM The Queen's Prize.

David is making his third trip to South Africa, the last being 10 years ago when he was a member of the GB Palma Team as a target coach. On this tour he has the dubious privilege of being the team armourer, dubious since David has no wish to waste valuable drinking/eating time trying to work out which bit goes where.

David and his wife Karen are in the process of starting a company smoking food. They specialise in cold-smoked venison (shot by David) and anyone in the vicinity of Bisley is likely to be asked to try the latest batch. Like a celebrity chef, he will be willing to exchange recipes with any Biltong experts to refine his offering.



Bill Richards

Bill is a teacher of mathematics and computer science at St. Bede's, an independent school in East Sussex. Teaching is his second career, having spent over 20 years in the IT industry in a variety of roles. Of the two careers, he believes that teaching is, by far, the more rewarding and the long holidays don't hurt!

Whilst Bill has been overseas with eight Great Britain teams as both a shooter and a coach, this will be his first tour with England and his second to South Africa, having travelled there in 1998 in the lead-in to the 1999 Palma match. That tour in 1998 was also Bill's last overseas tour, since he and Carol adopted two children shortly thereafter and touring overseas took a significantly lower priority.

Bill is very grateful to his family for 'letting him out' again, although Carol has said that he 'owes her big time', especially since he is missing their 20th wedding anniversary whilst in South Africa!



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An U25 perspective on Target Rifle Shooting

Target rifle shooting is not the most likely of sports for a 13 year old girl to become involved in. But while most of my contemporaries were eagerly discussing who would make the first XI hockey or captain the first XV, twice a week I trotted off to the shed-like building tucked away in an insignificant corner of the school grounds and spent the afternoon firing a gun.

Although, to be truthful, my interest in shooting began more as a wonderful way of getting out of playing more conventional games in freezing Norfolk winds, I was lucky enough to be encouraged in the sport by the then shooting master at my school, the charismatic Nigel Ball.



Like all beginners I started on a .22 rifle lent to me by the school, firing at a target 25 yards away and as I became familiar with the techniques and terms of the sport, it became clear that my then extremely small stature (see visual evidence of this below) was no disadvantage to doing well.

Nigel Ball was keen to let his cadets experience full-bore shooting as early as possible in their careers, and to that end my first experience with a 7.62 rifle was aged 13 at a (compulsory, if you wanted to remain part of the club) cold, wet and windy Easter camp at Bisley. I returned to school with a badly bruised shoulder (there being no jackets small enough to fit me in the club at that time – though one was shortly thereafter manufactured), but thoroughly exhilarated. When, aged 14, I was chosen as part of the school team which toured Trinidad and Jamaica, it became obvious that this was the sport for me.

Firing a Jamaican police rifle requires two people to keep me upright!

Getting started

In the UK, a country with extremely strict firearms laws, there are three main routes into the sport of target rifle shooting.

Firstly, youngsters often start via the local ACF (Army Cadet Force) or ATC (Air Training Corps). All British counties have such a cadet force, which are youth organizations for 13 to 18 year olds, supported by the Ministry of Defence but not run as recruiting agencies, though a proportion of their members do go on to a military career.

As well as learning field craft, first aid and taking part in adventure training and community projects, a cadet also has the chance to take part in skill at arms and shooting. This is probably the most accessible way in to the sport for the majority. However, probably more enter via the second method.

The second route is through a school and this, as I described above, was my own route. Although many schools in the UK have a CCF (Combined Cadet Force) with the same aims as the ACF and ATC there are some (mainly independent) schools that have a great tradition as 'shooting schools'. These include such well-known names as Epsom College, RGS Guildford, Uppingham, Dollar Academy, Wellington and my own school, Gresham's, and a number of others. These schools are lucky enough to have their own .22 ranges and a

dedicated shooting master or mistress to encourage as many pupils as possible to take part. Some parents obviously choose to send their children to such a school knowing its reputation, but others like me simply decide, once there, to have a go at something they would never otherwise have the chance to try and find they are hooked.

The final method is through family connection. After all, shooting is not much of a spectator sport, and there's little else to do after watching your father (or mother for that matter) compete at Bisley than to have a go yourself and with expert personal tuition thrown in for free. The fact that there are 2 Lothians in this team shows the success of this method.

In any event, however one starts in the sport, all roads lead to Bisley and inevitably to the annual Imperial Meeting in July where, firstly at the Schools' Meeting in which cadets from all over the country take part and then in the main competitions, those who have found they have a liking, hopefully allied with a talent, for the sport, meet and get to know each other over the course of their school careers. They are also assisted by the very worthwhile 'uncles and aunts' scheme whereby a more experienced senior shooter volunteers to mentor a cadet during the year and particularly during the Imperial Meeting, helping them with technique, equipment and general advice.

Probably the culmination of a cadet shooter's ambition is to be chosen to be a member of the UK Athelings team which travels to Canada every summer to shoot against international opposition.

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After school problems for the U25

It is when you turn 19 and leave school that the difficulties with being an under 25 shooter can start. While still at school or a member of a local cadet squad, your rifle and equipment, from jacket to cleaning rods are generally provided for you, as is your accommodation and keep at Bisley, but on leaving you suddenly find yourself having to purchase a lot of very expensive kit and pay out hefty travel and accommodation bills. Even if you are so lucky as to get to the top of the caravan waiting list, the annual rent is still a problem. This is when a lot of very promising young shooters leave the sport, they simply cannot afford it on the basis of a student loan or a first job.

The fact that there are only 161 under 25 NRA members out of a total membership of 6000 reflects these difficulties, although the NRA hope that this number will substantially increase when their new cadet handbook is up and running and it becomes easier and cheaper to join.

Fortunately some recent innovations like the Bun Hill club have been set up (founded 1999) to try and ease the passage of young people who want to continue with the sport by providing cheap accommodation and facilitating the purchase of affordable equipment.

The NRA, most universities that have shooting clubs, and other organisations do their best by reducing or subsidising competition entry fees and club membership dues for under 25s but despite this shooting remains an expensive sport.



The other difficulty of course is the time aspect. Because of the strict rules surrounding the sport, it is not something that can be easily practised on an evening in the park, though smallbore and Scatt are both useful. There are a number of local ranges around the country where practice and competitions are held, but the majority of major competitions require a trip to Bisley (which is a long way for those at Scottish universities for instance) and a whole weekend's commitment – not always easy to fit in.

Still, enough people do survive the difficulties to make up a thriving Under 25s club which fields teams in most competitions while endeavouring to keep costs down and social life up. They also work hard on fundraising to help any under 25s with touring expenses abroad – with no official national support it can be an expensive business being picked to represent one's country at target rifle shooting.

Added value

But to revert to my own perspective – Apart from the excitement of the shooting itself (how can I forget my first V Bull at 1000 yards or finally getting through to Queens III?) I realise that I have gained other valuable transferable skills from the sport. As well as the usual lessons about winning and losing taught by sport in general, I have learned how to perform at a high level both as an individual and on a team basis. The fact that I have been competing with men and women of all ages on a level playing field since I was quite young, has taught me, I think, how to get on with a wide cross section of people.

International opportunities

I missed out on the Athelings but my trip to South Africa with the GB under 19s was one which cemented many friendships among our generation of shooters. Three of us from that team are excited to be returning to Bloemfontein in this 2009 senior team.

The selectors are very good at including some promising youngsters in every touring side and it is every young shooters dream to be chosen for a senior team. However, I remember how nervous I felt, aged 18, on realising that I would be shooting my first non-school/cadet team match for the NRA in the Channel Islands in the company of people us youngsters had seen from afar as almost god-like figures in the shooting world. Panic. Would I even hit the target, let alone acquit myself sufficiently to justify my selection?



The reality could not have been more different from my fears, everyone was so helpful, welcoming and friendly to a novice tourer and I soon realized what a great experience, both in the shooting and social sense, that being part of a tour could be.

As happens in shooting though, things don't always go to plan and on winning my first cap for England in the National match 2007, I shot so badly that I thought that it was likely to be my last.

So I was thrilled to be chosen as the youngest member of the senior England team to the USA last summer, a trip which turned out to be as memorable for the comments made on the upcoming US elections by some of our hosts, as for the spectacular helicopter ride over the Grand Canyon and the contrariness of the winds at Raton. The learning curve was steep (Palma targets every match – aaargh) but I had nothing but encouragement from my teammates – something that I know will also be the case on this tour to South Africa.

I hope one day to be able to do likewise and pass on some of the things I have learned to the next generation of Under 25 shooters. If asked by a younger shooter what it is like to tour with a senior side, I would say – “awesome”!

Holly Foster, January 2009



Mary Boston

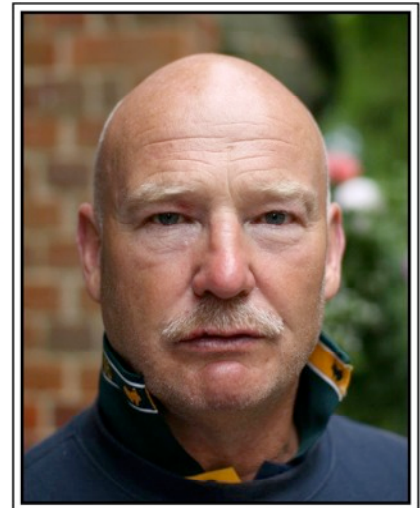
This will be Mary's second shooting trip to South Africa, after first visiting with the GB Under 25s in 2000. Having toured Canada, the USA, and Australia with Great Britain at senior level she is no stranger to shooting trips abroad, but this will be her first representing England and as such she is very pleased to be breaking her duck. Needless to say she's looking forward to the tour enormously, particularly given the celebrations that are taking place this year and the number of old friendships that will hopefully be renewed.

Outside shooting Mary is an interior designer running her own company, Firefly Interiors, in London. She enjoys it hugely, and swears never to go back to being an employee again! Once her business empire is up and running she plans to make a bid for freedom and move back to the country where one can breathe clean air and cross a road without immediate fear of death. She loves cooking, food, fireworks, good company and (joy of joys!) her work.

David Dyson

David has been a regular visitor to South Africa and its surrounding countries since 1999 both shooting and on holiday. Having been a member of the victorious GB team of 2008 to RSA, he is awaiting the backlash from last year's success in the Protea match, a feat achieved by very few touring teams evidencing how fiercely the South Africans defend this match. Not content with just the team victory, David went on to win the State President's trophy, a popular victory with everyone except the bearer party! As a former Rugby League prop forward, he admits to being designed more ideally for carrying than being carried!

David is once again looking forward to some good old South African sun and great Western Cape Wines after coming out of a pretty horrible English winter.



Holly Foster



Holly started shooting at Gresham's school aged 13 with a rifle considerably taller (and possibly heavier) than she was. Nothing much has changed since. Holly started to come to prominence in 2006, shooting for Norfolk, becoming top cadet and, last but not least, achieving 10th place in HM Queen's Prize. She won her first England cap shooting in the National in 2007 and that year was also a member of the victorious NRA team to the Channel Islands. She completed her first senior team tour with the England team to the USA in September last year.

Holly is now shooting for Cambridge University, coxing her college's men's rowing eight and studying law (in that order). This will not be her first visit to South Africa as she was a member of the GB U19 team in 2007 along with her current team-mates, James Lothian and Stuart Young, and she is looking forward to renewing her acquaintance with the winds of Bloemfontein and South African steaks.



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Sacker & Partners congratulates Stuart O'Brien on his selection for the England Rifle Team in 2009 and would like to wish him and the team every success in South Africa.

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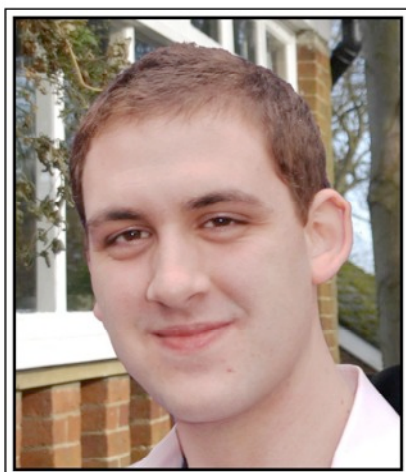
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James Lothian



James, like several others on the tour, started his shooting career at Epsom College. Finishing school in 2006, he moved onto Cardiff University where he is in his 2nd year studying Biomedical Science with Anatomy, with plans to do a post-graduate medicine degree.

This is James' first senior tour. He shot in Canada as an Atheling in 2006, and toured South Africa in 2007 with the GB Under 19 team. As such he feels he knows more about shooting in the RSA than the vice-captain does! James has represented the GB Under 25 team for the past 2 years, and got his first Surrey cap in 2008. He also has a Queen's badge, a couple of St George's badges.

James is honoured to have been selected as captain of the GB Under 25 team to compete in the World Championships out in Brisbane in 2011.

He is very much looking forward to shooting again in South Africa, meeting old friends, and enjoying a diet which is very much different from that of a typical student!

David Luckman

David is currently the Individual World Champion and is relishing returning to Bloemfontein after a 10 year absence since shooting there for the GB team in the '99 Palma Match. His successes in the UK are numerous and include fourteen consecutive Grand Aggregate crosses (including one gold and two silver ones), thirteen St George's badges and twelve Queen's badges (including coming 2nd twice).

David started shooting with Sedgemoor Target Shooting Club and has captained the Somerset county team for the last eight years. He was an Atheling in 1994 and has since become an experienced tourist with both GB and England teams. He has previously visited South Africa in 1998 and 1999, and hopes to improve upon his 3rd place in the 1999 South African championship.

David works for Lloyds (formerly HBOS) in Bristol as an Actuary. To take his mind off the credit crunch, he is a qualified tennis coach and avid sports player in his spare time, competing in triathlons and half marathons as well as enjoying mountain biking, surfing, and swimming amongst others. However his bachelor days are numbered as he is getting married in September.



**Best Wishes to the members of the 2009
England Rifle Team for their tour to
South Africa and especially to
Stuart O'Brien, Old Oundelian**

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Jane Messer

Jane first travelled to South Africa as a member of Robert Stafford's GB team in 1993 and toured there again in 1998 and in 1999 for the Palma match. She was also a member of Steve Thomas's very successful GB team last April and is very much looking forward to this her fifth visit to the ranges at Bloemfontein. In fact she is looking forward to another successful season, hopefully improving on her individual shooting after some near misses at Bisley last year (2nd in the Queen's, 4th in the Grand).

A previous winner and runner-up in the Grand Aggregate at Bisley, Jane has also won the Grand in South Africa. However, Jane particularly enjoys team shooting. She shoots and coaches regularly for Sussex and is the only British lady to have shot in all the 'Big Five' matches (the National, MacKinnon, Kolapore, Palma and Australia). Jane has toured previously to Australia, Canada, New Zealand, South Africa, the USA, West Indies and Zimbabwe.



Stuart O'Brien

Stuart started shooting full-bore shooting at Oundle School where he became an Atheling in 1996. Stuart continued shooting at Nottingham University, captaining the winning team for the Musketeers and the BUSA full-bore championships in 1998.

Stuart is also a long-time shot for Cheshire and for Manchester Rifle Club. Since moving to London, Stuart, in his own words, misses the "fantastic weather" at Altcar range. Stuart continues to shoot for his old school, the OO "Troubleshooters", and was a member of the winning schools veterans team in 2006 and 2007.

Stuart has made the Queen's final twice and the George's final three times. This will be Stuart's 5th tour, other tours including a GB Under 25 tour to South Africa in 2000 and the NRA tour to the Channel Islands in 2002. This is Stuart's first tour with the England team.

Outside of shooting, Stuart is an Associate solicitor at pensions specialist law firm, Sacker & Partners LLP. Stuart is looking forward to getting married to his fiancée Juliet this year, although in a poor piece of timing he will miss the Bisley meeting while on honeymoon.



Parag Patel

This tour marks Dr Parag's 13th at senior international level and 3rd to South Africa. Accomplished in both team and individual shooting, Parag has competed in winning teams in all Big Five fullbore matches, gained gold and silver medals at the Melbourne Commonwealth Games in 2006 and has won the Bisley Grand Aggregate twice. He is looking forward to defending both the South African Grand Agg and Championship from his visit in 2008, not least from the rest of the England team!

Having recently finished off his consultancy exams, Parag and his wife Urvi now have their hands full with baby Aaron. Somehow opportunity has been found for skiing perilously close to the start of this tour, all part of an altitude training regime to prepare properly for the rigours of Bloemfontein.

Parag's slice with a scalpel is exceeded by that with a golf club, but experience suggests that more time on the course would be unlikely to improve matters.





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Stephen Penrose

This will be Stephen's fourth shooting tour to South Africa. He started shooting at Rugby School - the home of Rugby Football - where he became an Atheling in 1976. Since those early days his shooting has taken him to many countries around the world including New Zealand where he was part of the winning GB Palma team in 1995 and most recently to the USA with the England team last September.

However South Africa remains a firm favourite as he seems to have a bit of luck there winning the Long Range Aggregate in 1993 and the State President's in 1999. This will be his first return to Bloemfontein since 1999 and he is looking forward to the chance of regaining the title as well as enjoying the hospitality and camaraderie which have always been a feature of South African shooting.



David Rose

David has been shooting since he was 13 at Epsom College where he captained the VIII and won the Ashburton in '98 & '99. Subsequently at Southampton University he captained the team to BUSA success in both small and full bore competitions. He is a regular shooter with the Surrey RA and the Old Epsomians, and in recent years has toured to Australia and the Channel Islands with the GBu25's and the NRA.

Having not previously toured to South Africa he is looking forward to experiencing the challenging conditions, and the tough competition.

Away from shooting, David is a Recruitment consultant in London specialising in temporary accountancy placements.



THE Old Epsomian Rifle Club wishes the best of luck to Andrew Lothian, James Lothian, Parag Patel, David Rose and the England rifle team on their tour to South Africa

Also the best of luck to Ian Shaw (Scotland), Clare Huxter (Wales), & Sam Hunter (GBu19's)
Keep up with the Old Epsomians at www.oerc.org.uk



Paul Sykes

Paul started shooting with his father having spent many a year at Bisley 'on holiday'. He has captained his school, The Perse, and the University of London. In 2004 he was Adjutant of an extremely successful Great Britain Under 25 tour to South Africa. Last year he was a member of the victorious Great Britain Rifle Team that won the Protea Match and he is keen to taste victory again.

His career highlights include one top 50 Grand finish, several H.M. The Queen's finals and winning the Welsh Open in 2007 as an Englishman. Away from shooting, Paul is a qualified doctor, currently undertaking his surgical training in the Manchester area with the intention of following a career in General Surgery. He is also enjoys skiing, running and cycling.

He is very much looking forward to returning to the Bloemfontein ranges and is hoping to make it "three from three".

Jon Underwood

Following his very enjoyable tour to South Africa last year, Jon is once again looking forward to the challenge of the fickle winds of Bloemfontein. He is also looking forward to being in South Africa for the celebratory 80th anniversary matches, not just with the England team, but with his club team as well.

This will be the Old Guildfordians first overseas tour and has been organized as part of the celebrations of the 500th anniversary of the founding of his old school, the Royal Grammar School, Guildford.

Jon has achieved a number of notable successes including winning the Queen's Prize, the Grand Aggregate and the St George's Vase and he has been on 10 previous GB or England tours, including three to South Africa. He is keen to encourage youngsters to participate in the sport by spending a lot of his spare time coaching at his old school. Somehow he manages to fit this in between running the family business of Tool and Plant Hire and property letting, especially during these somewhat interesting economic times!

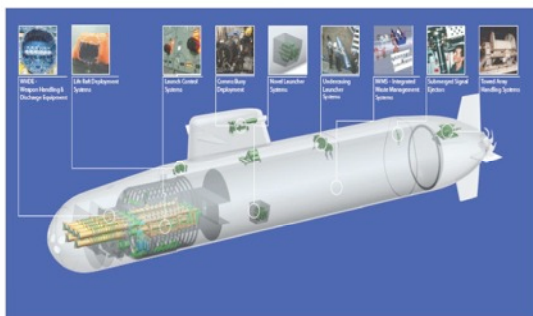


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James Watson

James first went to South Africa with a group of friends to shoot in 2001. Since then, he has returned on four other occasions the most recent in 2006 with the Great Britain team. This will be James' fourth England tour. He started shooting at Uppingham School in 1988 and has since represented Great Britain on numerous occasions including in the most recent Palma Match.

In the last few years James has shot four of "the big five" matches and is hoping to add a Protea Match to his list. During his shooting career, he has toured across the world to countries including Canada, USA, South Africa, Australia, Malaysia and the Channel Islands. In the UK, James' wins include the St George's 1st Stage, the Times, the Conan Doyle, the Monday Aggregate, the Scottish Grand Agg. and Championship and coming 3rd in the Queen's Final in 2000.

James plays an active role in the NRA of the UK where he is one of the Trustees and Chairman of the Membership Committee. In his free time, he enjoys travelling (particularly to the USA where he lived for five years), shooting game, skiing and scuba diving; to afford all these trips he works at SAP as a Principal Sales Consultant.



John Webster

John started shooting at Uppingham School and progressed to international competition via the Athelings, of which he was Captain in 1974. Since then, he has represented England and Great Britain in over 30 international matches at home and overseas. This roster includes shooting in all of the 'Big Five' matches as well as the America and Protea matches. His previous visits to Bloemfontein were in 1998 and 1999, and he has fond memories of the keen competition there.

His "elder statesman" status is growing as he has captained both England and Great Britain on several occasions and was asked to referee the most recent Palma match in Ottawa under the watchful eye of Richard Van Lingen. He has recently been appointed Captain of the GB team for the 2011 Palma match in Australia.

When not shooting, he runs an investment management firm headquartered in London. He and his wife Louise now make their home there after a 20 year stint in the US, where their 2 children attend university. His other interests include rugby (he was an Oxford Blue alongside former Springbok international and coach, Nick Mallett), golf, fly-fishing and collecting fine wine.



Alex Williams

Alex Williams started shooting at Uppingham School in the early 1990's and was part of the Ashburton winning team of 1995. In 1997 he captained the annual Athelings tour to Canada, and returned a year later as a member of the GB Under 25 team. In 2000 Alex toured with the GB Under 25 team to South Africa, where he learnt not to wear shorts on the firing point thanks to some large red ants.

At the age of 18 Alex moved to Los Angeles as part of a fruitless plan to become a rock guitarist and for a large part of his 20's he lived in China, returning last year to London and happy at now being able to shoot a lot more again! Alex regularly shoots for Cambridgeshire and this is his second England tour cap, having been a member of the England team to the USA last September.



Andrew Wilde



Andrew started shooting at Bath University in 1992, progressing to full-bore 2 years later. His first taste of successful team shooting was with the University in 1996, when he was part of the winning Musketeers team. He has shot for Somerset since around this time.

In 2005, a new stock signalled a change in Andrew's fortunes, since when he has made HM Queen's final each year - along with achieving 4th in the Grand Agg. in 2007 and 5th in 2008. He has represented England in the National for the last 3 years, and gained his first GB cap in the Kolapore in 2008 – in which he top scored.

Andrew's previous tours include the 2006 NRA Channel Islands tour, the 2008 LMRA tour to the West Indies (where he was top individual) and the 2008 England tour to the USA. Last year Andrew also took a successful trip to Scotland where he won the Scottish Championship.

Andrew's talents also extend to computers and graphic design, which has ensured his position as the designer and producer of the team's brochure that you are currently reading!

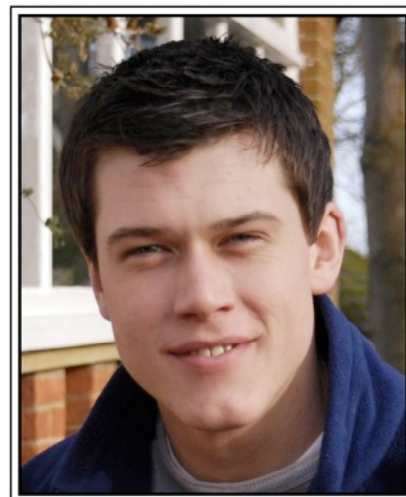
Stuart Young

Stuart started shooting at the age of 14, being the youngest of four shooters in his family. He can be found most weekends shooting at Altcar ranges on the Formby coast. Stuart proudly shoots for the county of Lancaster of which one day hopes to be captain.

Stuart's greatest shooting achievements to date include: shooting for England in the National match twice; finishing in the top ten of the Bisley Grand Agg.; being part of the Commonwealth Games Development Squad and being appointed Vice Captain of the U25 team to Australia for the World Championships in 2011.

This will be Stuart's 3rd tour to Bloemfontein, having previously toured twice with the GB U19 team. He loved these visits so much he cannot keep away. He has also toured on the 2007 NRA Channel Islands team, and hopes to continue touring on a regular basis.

Away from the range, Stuart works as a joiner covering the Cheshire area whilst living in Manchester. He hopes to put his cabinet making qualifications to better use one day creating and restoring hand-made furniture and maybe even a few rifle stocks!



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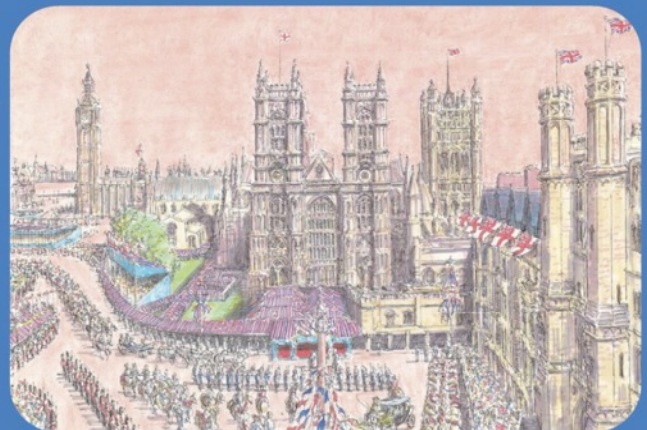
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How to make a Good Barrel – John Krieger

A person once said to me, "You think single-point cut-rifling is the best because that's the method you employ to rifle." He had the right words but in the wrong order. I employ single-point cut-rifling because I think it is the best method to rifle.

Perhaps, to explain why I think it is the best method, a brief explanation of the other methods of rifling a barrel is in order. The other methods we will discuss are hammer forging, button rifling, and broach cut.

In **Hammer Forging**, the blank, with an oversize hole in it, is placed in the machine over an undersized carbide mandrel that is the negative of the rifling. The barrel blank is shorter than the finished barrel length. It will "grow" in length as the blank is worked down over the carbide mandrel. Two sets of opposing "hammers" then cold work the steel onto the carbide mandrel, thus forming the rifling twist form, size, and barrel length. At the same time, the outside contour can be formed and even the chamber can be put in; although that requires an even bigger starting hole leading to even more cold working of, and induced stress into, the barrel.

Once set up, hammer forging produces very high production rates. The downsides are its lack of flexibility for smaller quantities, tremendous stress induced into the barrel's now uniform twist, and spalling of the metal in the bore.

Spalling is microscopic flakes of metal breaking off the bore surface and leaving a void or depression. Oddly, in the bore of the barrel itself, this may not affect much, but I feel it is the "kiss of death" at the crown as far as accuracy is concerned. It does not necessarily happen right away or it may never happen. But when it does, it is sudden and severe. It is characterized by the rifle shooting to its normal level of accuracy; and then in one shot, it will never shoot again. It can be recrowned, of course, and accuracy may return; but the problem can return as well. It is for this reason I feel hammer forging produces a barrel that is unsuitable for serious work; i.e. a police sniper facing a hostage situation. The spalling is caused by the excessive cold working of the steel and is exacerbated by a poor finish in the bore before hammering.

In **Button Rifling**, the blank is of the proper length to begin with. It has a hole drilled and reamed in it. The blank is a uniform diameter on the outside from end to end. For example, the breech is 1.250 all the way to the muzzle of 1.250. As in hammer forging, the button is again a carbide negative of the rifling. Only, unlike hammer forging, it is bigger than the reamed hole. The button and the barrel bore are lubricated with an extreme pressure lubricant, and the button is pushed or pulled through the bore.



The passage of the button through the bore with the negative of the rifling, cold forms the rifling into the barrel. The outside of the barrel has to be a uniform diameter to resist the extreme pressure of the button uniformly, or else the rifling will not fill out properly. This extreme pressure involved induces stress into the barrel that now must be stress relieved in a furnace at 1000 – 1100 degrees F. After the stress relief process, the barrel can be turned to its final contour. It is now and only now that the actual bore and groove dimensions can be determined. Even though the barrels were stress relieved, all of the stress can't be taken out without the risk of drawing too much hardness out of the steel. This results in an opening up of the bore as the barrel is turned. The more steel removed from the outside, the more the bore opens up. Thus, a sporter barrel, for example, will have the bore at the muzzle slightly larger than at the breech. Premium barrel makers will lap the barrel back to a uniform condition.

The many different factors that can be involved in what will be the button-rifled barrel's final size and quality are as follows: the particular run of steel involved, its hardness, its outside diameter, the size and finish of the reamed hole, the size of the button, how fast the button goes through the barrel, how much the barrel springs back after the button has passed through, how much the bore closes up with stress relieving, and how much it opens up and/or bows in final turning. As bad as this sounds, the button-rifle barrel maker's considerable skill and expertise allows him to play most of these factors to achieve the desired result. Nonetheless, he still won't know exactly where he stands until the barrel is completely finished. This is why some barrel makers offer different grades of finished button-rifle barrels.

One other factor pertaining to button-rifled barrels worth mentioning is twist uniformity. All methods of rifling a barrel uniformly depend to some degree on the homogeneity and uniformity of the barrel steel but possibly none more so than button rifling. The button has the desired twist ground on it. Some makers depend on this alone to rotate the twist into the barrel. Others use this plus, they "leader" the button with a machine device to help control the twist. The problem occurs if the button encounters different grain structure or harder or softer areas. Then the button will tend to slow down the twist or increase it leading to a lack of uniformity. It is felt that this, more than any other factor is why, on the average, more button-rifled barrels do not fall into the middle of the bell-shaped curve where the very accurate barrels are found.

None of this is to say that button-rifled barrels are not good barrels. They are. To say otherwise is ridiculous. They have been winning and setting records from the early 1950's to the present day. Krieger Barrels actually has a button rifled OEM barrel line called Criterion Barrels where we produce production barrels for various manufacturers. I have a few Criterion barrels on my own rifles, and they shoot extremely well.

The third method, **Broach Cutting**, is used mostly for pistol barrels, but a number of manufacturers produce rifle barrels with this method as did the arsenals during WWII.



Unlike the previously described methods, broach cutting cuts metal away to produce rifling rather than cold forming it by moving metal. Thus, it induces no unwanted stress into the barrel.

The broach itself is a long cutting tool that has a series of cutter bands that have the twist, the number of lands and grooves, and the rifling form ground on them. All in all, it employs hundreds of cutters on the broach tool to rifle the barrel. Each band of cutters is approximately .0002 of an inch larger than the previous band. Thus, as the broach is pulled into the barrel, each band progressively cuts the grooves deeper until final size is reached. Depending on the length of the machine used, several roughers and a finisher broach may be employed. Broach-cut barrels make good production barrels. The down side is the high up-front cost of the broach tool and its caliber, and that the number of bands and grooves and twist can't be changed without going to a different tool. Also, due to the tremendous force needed to pull the broach through, there is a tendency of the broach tool to stretch as each additional band of cutters enter the barrel. This makes the actual twist slow down as the broach is entering the barrel and speed up again as it exits the barrel. This also makes the groove width vary. All in all, if made properly, they shoot well and have no induced stress to cause trouble.

Single-Point Cut Rifling employs one single cutter to rifle all the grooves. The cutter is ground to the width of the groove and the top is ground with the radius of the bullet. The cutter is pulled through a groove removing approximately .00009 of an inch from the groove per pass. The cutter riding in the rifling head returns to the front of the machine and exits the barrel. The barrel then indexes to the next groove and is pulled through the barrel again removing .00009 of an inch from the groove. The process continues until the barrel has indexed for the proper number of grooves; i.e., 4, 6, 8 etc. For example, after the fourth cut on a four-groove barrel when the rifling head returns to the front of the machine, it enters a device called the feeder. The feeder turns a screw in the rifling head a slight amount which in turn pushes a wedge under the cutter a slight amount which raises the cutter the .00009 of an inch to make its next set of four passes through our four-groove barrel. This continues on for hundreds of passes until the proper groove depth is reached.



Obviously, this method induces no stress into the barrel. But there are numerous other benefits to single-point rifling as well. Unlike a button-rifled barrel that has to have a uniform outside diameter before buttoning, the cut-rifled barrel can have the severe outside turning even fluting done before any of the critical inside work; i.e. the reaming, rifling, lapping, etc. is performed. The irony in this is a button-rifled barrel should be pre-turned but can't be; a cut-rifled barrel can be but (because of no stress) doesn't have to be. Still, because of the personalities of steel, it is a safer route to do so.

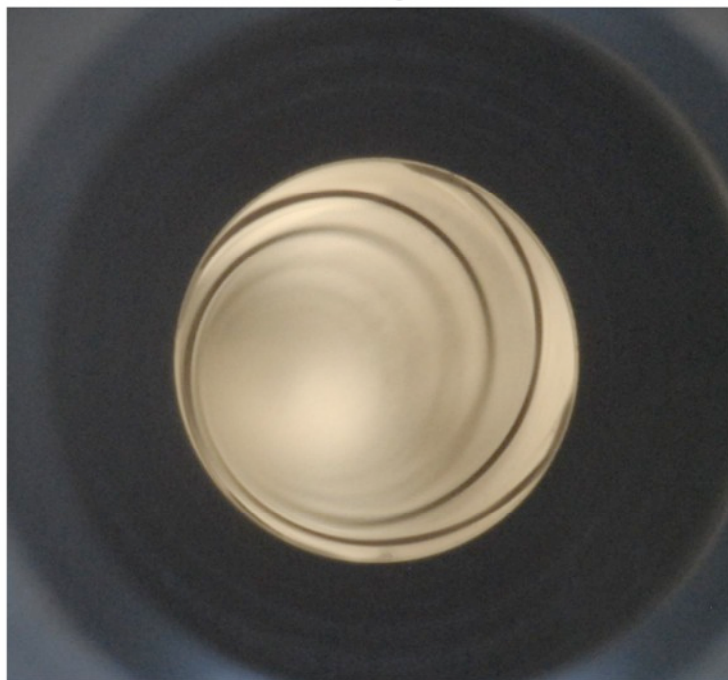
Another advantage of single-point cut-rifling is its versatility. One cutter can often cut a number of different twists, although the cutter life is shortened by the different grinds involved. Groove diameters can be easily varied and only require a regrinding of the top

radius to the new groove diameter. Bores, however, can only be appreciably changed by retooling as a new reamer would be required (and sometimes a drill) and also a rifling head to fit the new reamed hole size. The rifling head and reamer are married to each other by their size. However, no other rifling method can vary the bore diameter without a tooling change either. Twists in single-point cut-rifled barrels are very uniform as the rifling head is leadered by a precision bar with the twist on it. Also, single-point cut-rifling is the least sensitive to variations in the steel.

Speaking of **Steel**, all barrel makers are at the mercy of the steel. Good steel – homogenous, uniform & stress free – gives good barrels. Bad steel – all other things being equal – gives bad barrels. And, unfortunately, there is usually no way to tell completely ahead of time. This is why we cryogenically treat all our barrel steel before we begin to make a barrel from it. This is the time to do it as it makes the steel better, and we can make a better barrel with better steel. No step in making an accurate barrel is unimportant so cryogenic treatment must be done first. Cryogenic is not a cure-all. It just makes the steel a few percentage points better on the average to bring more barrels into the center of the bell-shaped curve. Cryogenically treating the steel does two things for us. First, it makes the grain structure of the steel more homogenous and uniform. Second, it gets rid of the last bit of stress. It does this by the following. The metallurgist tells us that at the steel mill when our steel is quenched and tempered there are two types of grain structures present - austenite and martensite. They both have stress. When the steel goes into the oven at 1150 degrees F for stress relieving, the martensite is stress relieved but the austenite does not respond to the heat. But by treating the austenite to cycles of extreme cold (-300 degrees F), the austenite is converted into a martensite and can be and has to be stress relieved afterward by heat. This is because the new martensite is brittle just as it was when originally quenched.

Interestingly, over time austenite will convert into martensite on its own, but it is brittle and should be tempered. Perhaps this is why old steel is sometimes brittle.

So what are the advantages of single-point cut-rifling that make me like it so much? It is the most stress-free process. The barrels can be contoured before reaming and rifling. Twists are the most uniform. Bore and groove diameters are the most uniform. The dimensions are



also very predictable. No surprises at the end. And cutting tool angles can be matched to the steel to produce the best finishes.

In everything there is a trade off. Get something here, give up something there. So what is the trade-off with single-point cut-rifling?

Simply the two hours or more it takes to rifle the barrel along with the very high tool maintenance.

So why do we do it? Because I believe overall it is the preferred method to produce the best barrels possible.

John Krieger, February 2009

Acknowledgements

The Captain and Team for the England Rifle Tour to South Africa 2009 would like to extend their thanks to the following for their generous support of the team:

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And finally, to all the partners, wives and husbands of the team for their support throughout the build up and during the tour.

This brochure was put together by Andy Wilde and printed by Colin Judge at Print-Rite. Articles were by Jane Messer, Jon Underwood, Holly Foster and John Krieger.



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