

A Man For His Time? Sir Charles Arden-Close 1865-1952

by C.I.M. O'Brien

Five Superintendents, or Directors General, of the Ordnance Survey appear in the *Dictionary of National Biography*, William Mudge (as do two of his sons), Thomas Colby, Sir Henry James, Sir Charles Wilson and Sir Charles Arden-Close, the most recent DG to be honoured with a knighthood or the Fellowship of the Royal Society. Sir Charles took the additional name of 'Arden' late in life but he will be referred to here, throughout, as 'Close'. Space will only permit a brief overview of a very full life before three facets are reviewed in more detail.

Charles Frederick Close was born in Jersey on 1 August 1865, the eldest of 7 sons and 6 daughters of Major General Frederick Close, late Royal Artillery. The family lived, perforce, 'quietly'.¹ Nevertheless Close passed second into the Royal Military Academy, and first out of it, to be commissioned into the Royal Engineers in July 1884. His first years with the Corps included a posting to Gibraltar, two years with the Balloon Section at Chatham and a spell constructing heavy gun batteries for the seaward defence of Calcutta.

While in India he took the opportunity to transfer in 1890 to the Survey of India. That institution enjoyed great prestige and attracted some of the ablest young RE officers, many of whom devoted the rest of their careers to its service. Close was to return to Chatham in 1894 but his experience with the Survey, employed on topographical survey and secondary triangulation in Burma, left a lasting impression. For the rest of his life maps and surveys were to be central to his career.

In the following year he was picked to lead the British element of a Commission appointed to survey a section of the frontier between the, British, Niger Coast Protectorate and the German Colony of Kamerun - a frontier defined by diplomats whose knowledge of African geography was, to say the least, hazy. The survey was successfully completed though the diplomats subsequently rejected the Commissioners' advice. Close learnt a lot about international co-operation and the need for caution in the application of new technology, under field conditions.

On return from West Africa, Close received his first posting to Ordnance Survey.

He also started work on a revised edition of the *Textbook of Military Topography*, (published in two volumes, 1898). In no time at all he was off to Africa again as the British leader of a much more important Joint Commission tasked with establishing the course of the Anglo-German frontier between Lakes Nyasa and Tanganyika (the present-day frontier of Tanzania with Malawi and Zambia). Close landed at Cape Town on Wednesday 27 April 1898, on his first visit to southern Africa. On Saturday he lunched with Her Majesty's Astronomer, Dr David Gill, and obtained his support for a unified survey department for British Africa, which proposal he then put to the Governor, Sir Alfred Milner, over Sunday afternoon tea. Moving up country to Zomba (administrative centre of the Central African Protectorate) he persuaded Wahid Ali Khan, of Survey of

¹ Close quoted by de Graaf Hunter, obituary, p.327.

India, who had just completed a secondment, to delay his return home for a few months. He was to undertake nine-tenths of the Commission's plane tabling. Close wrote 'His work was not minutely detailed and in this respect it was inferior to the German topography, but it was available when it was wanted, which the German work was not'.²

Nevertheless Close established excellent personal relations with his German colleagues which were to serve him well many years later.

Close returned to Ordnance Survey but by February 1900 he was once more in South Africa, in command of the first survey detachment ever despatched from OS for active war service. Close wrote: 'whilst waiting at Cape Town, after a little opposition, I engaged a litho draughtsman and a litho printer and bought a litho press, stones and accessories, all ready to move up country.'³

Once at the front this unit was to produce what Close claimed to be the first multi-coloured map litho-printed in the field by the British Army. Unfortunately though his men continued to make a useful contribution to operations, Close went down with enteric fever and was invalided home. His experiences re-enforced his belief in the need for a regular peacetime topographic mapping programme, convincing him that many British lives had been lost through its neglect.

Restored to health Close was appointed Instructor in Surveying at the School of Military Engineering, Chatham. He speedily set about revitalising the teaching programme. The trigonometrical course would now take place under field conditions. Printing and lithography were brought under the Instructor's control allowing further development of the concept of rapid map production in the field to support military operations.⁴

These activities were interrupted in 1904 by a summons to a Cape Town conference which was considering a scheme for the unified mapping of all British territories South of the Zambezi. Unfortunately while the scheme received unanimous approval it was never implemented because Imperial and Colonial governments failed to agree on the division of financial responsibility.

1905 was to be the turning point in Close's career. Hitherto he had gained unusually wide experience but had rarely stayed long enough in one place to leave a lasting mark. Now some of that experience was to be distilled in the first edition of the *Textbook of Topographical Surveying*,⁵ published at 3s6d a copy and destined, with two subsequent editions, produced in collaboration with E.W.Cox and H St.J.Winterbotham, to serve as a field surveyor's 'bible' for more than half a century. Then an unexpected vacancy occurred at the War Office and for the next six years Close was to serve as head of the Geographical Section of the General Staff during a critical, but very fruitful, period. The Section was then responsible for the provision of maps for the Army (other than in India) including those of potential theatres of war. Its head was effectively geographical adviser to both Foreign and Colonial Offices, particularly when international boundary problems arose. Finally GSGS was much in liaison with British Colonial and foreign geographical services and participated in various international congresses and conferences.

² Close, Diary, Anglo-German Nyasa-Tanganyika Boundary Commission 1898, (RGS Archives).

³ Close, 'Fifty Years...', *ESR*, II, .3.

⁴ Col B.R.Ward, *The School of Military Engineering 1812-1909*, Chatham, 1909, p.35.

⁵ Major C.F.Close, *Textbook of Topographical and Geographical Surveying*, London, HMSO, 1905.

The British Army had been badly shaken in South Africa. This had stimulated a resolve to make it a well trained and equipped force, ready, at short notice, to fight a mobile war. Under Close GSGS, with some OS assistance, was to produce maps which matched this concept in scale and design and which, incidentally, met the criteria for ‘the ideal topographical map’ that he had presented to the Royal Geographical Society in 1904.⁶ Typically these were in the scale range 1:100,000 to 1:250,000, clear to read and free from clutter and, where completely new productions, showing an unmistakable house style regardless of whether they were of Belgium or Basutoland, Constantinople or Kenya. Of the first, Close’s successor at GSGS, Hedley, recorded that in 1914 ‘the original Expeditionary Force was very well equipped with maps, chiefly owing to the great foresight of Sir Charles Close’.⁷

However we may see things in retrospect, it must not be assumed that contemporaries saw a major European conflict as inevitable. Close himself took part in many conferences and discussions with both future allies and future enemies, for example to resolve Anglo-Belgian-German boundary problems in Africa and, incidentally, identifying a mountain that a former foreign secretary had declared to be ‘a myth’. This seemed to demonstrate that reasonable men could resolve apparently intractable problems.

In 1911 Close was appointed Director General of the Ordnance Survey, which appointment he was to hold longer than any other incumbent since Sir Henry James. However when he retired from the Army (and OS) in 1922 he was still only 57 and had 30 years as an elder statesman ahead during which if anything his range of activity broadened rather than contracted. He became Secretary to the International Geographical Union and served as its President at the time of the Amsterdam Congress in 1938, working hard behind the scenes to defuse the effects of increasing World tension. He became a very active President of the RGS at the time of its Centenary and the extension of its Kensington headquarters. He became deeply concerned about the rapid growth of World population and the demands this would make on resources while until his eightieth birthday he served as Chairman of the Palestine Exploration Fund. For these later years he will be remembered particularly for his writings, including *The Early Years of the Ordnance Survey*, *The Map of England* and a large number of short articles and notes in periodicals some of which were reprinted in *Geographical By-Ways*.⁸ At the same time he continued to correspond actively on one of his favourite subjects, map projections. (His last contribution to the *Geographical Journal*, ‘A Forgotten Pseudo Zenithal Projection’ appeared only shortly before his death in 1952).

It is now time to look more closely at three facets of Close’s career, the promotion of colonial surveys and mapping, the International Map project and his work for Ordnance Survey. These illustrate in turn what initiative and drive could achieve and the extent to which it was constrained by the circumstances of the times.

⁶ Major C.F.Close, ‘The Ideal Topographical Map’, *Geographical Journal*, XXV (1905), 633-47.

⁷ Colonel Hedley, contribution to discussion on Lt.Col H.S.L.Winterbotham, Geographical work with the Army in France’, *GJ*, LIV (1919), 12-28.

⁸ Sir Charles Arden-Close, *Geographical By-Ways and some other Geographical Essays*, London, 1947.

Close acknowledged more than once his debt to the Survey of India. When faced with African mapping problems, like Holdich before him,⁹ he saw solutions in Indian experience. This implied that only an Imperial organization could respond adequately to administrative, defence and development needs. The South African scheme failed to take off. Nevertheless when Close took over at GSGS he found a small Colonial Survey Section (two officers and four NCOs) in being. Originally destined for Jamaica, financial problems caused Close to arrange re-deployment in South Africa, where it mapped the Orange Free State at 1:125,000, latterly under the command of H. StJ. L. Winterbotham (very much a Close protégé). In concert with a senior Colonial Office Administrator, H.J. Read, Close arranged for the setting up of a three-man 'Colonial Survey Committee', the third member of which would be the Director General of the Ordnance Survey. Within weeks a despatch went out to Colonial Governors advising them that in future maps must be produced at specified standard scales (including 1:250,000 cover of each Colony or Protectorate).¹⁰ Annual reports of progress would be required and provision made for training natives of the colony (the Indian example was quoted). Topographic maps surveyed or compiled overseas should be sent first to GSGS for scrutiny and any necessary editing before they were passed on to OS for printing.

Very considerable progress was achieved before 1914 despite the lack of central (Imperial) funding, though the considerable autonomy enjoyed by Governors (one declared topographic survey to be 'a luxury')¹¹ made it difficult to secure uniform progress.¹² Even so by 1914, 84 officers and NCOs were serving overseas on secondment but the outbreak of war saw them recalled to their regiments while many of their civilian colleagues were diverted to war work. After the war the Committee was re-constituted but lacking the driving force of Close and Read, and with continued pressure for economy, much less was achieved. Nevertheless its formative years show how Close, recognizing that high powered schemes were not practical politics could achieve results through a combination of diplomacy and the prudent use of limited resources.

In 1891 Professor Albrecht Penck proposed the production of a map of the World at a scale of 1:1,000,000, at the International Geographical Congress at Bern. His proposal was welcomed by many and succeeding congresses settled many relevant issues, such as altitudes to be expressed in metres, longitude referred to Greenwich and standard sheets to extend 4° in latitude and 6° in longitude. Several countries produced sheets at 1:1M scale and GSGS even commenced a hachured 1:1M map of Africa (GSGS 1539) on what subsequently became International Map (IMW) sheetlines. Congress delegates, however, had no power to commit their respective governments to participation.

Several distinguished British geographers, including Close, attended the 1908 Congress at Geneva. Interested delegates were invited to an informal dinner at which a

⁹ See e.g. Colonel Sir T.H.Holdich, 'How are we to get maps of Africa?', *GJ*, XVIII (1901), 590-601.

¹⁰ Mr. Lyttelton to The Governors, High Commissioners And Commissioners August 24 1905, Colonial Office Confidential Print, African No.777. Survey of British colonies and protectorates; Correspondence, pp 16-18.

¹¹ Report dated 26 May 1910 from Governor of Kenya to Colonial Office, Colonial Office Confidential Print, African No.954. Administration of the East Africa Protectorate.

¹² See e.g. Gerald McGrath, 'The Surveying and Mapping of British East Africa 1890 to 1946', *Cartographica* No.18, Toronto,1976.

five-man committee (including Penck and Close) was formed.¹³ At a subsequent meeting, on a lake steamer, this group drafted proposals which were to form the basis of all subsequent decisions. Returning to London, Close called on the Foreign Office and persuaded it that Britain should invite representatives of the leading nations to London to put the project on a formal basis. The meeting took place in November 1909. It entrusted GSGS, that is to say Close, with the drafting of all resolutions, so that the project was launched in harmony and light. Finally at the Paris conference in 1913 the British Government was empowered to set up a Central Bureau at O.S. headquarters, Southampton.

Over the next few years a number of countries produced pilot sheets but no extensive areas had been covered before war intervened. It was quickly apparent that small scale planning maps would be needed. On the strength of a telephone conversation between Hinks of RGS and Hedley of GSGS, the former society was launched into the compilation of what became quasi-IMW cover of Europe as well as parts of the Middle East and Africa. Sheets could only conform to the official specification so far as data and resources permitted. Close's attitude was ambiguous. While OS made a significant contribution, fair drawing as well as printing many sheets, he would not have this acknowledged for fear of prejudicing its peacetime role as Central Bureau.¹⁴ The later history of IMW is outside the scope of this paper but it is notable that the major contributors have been the American Geographical Society and various military agencies rather than national civil cartographic services, few of whom gave it much priority.¹⁵

When Close took up the Director General's post at Southampton his previous OS service amounted to only a couple of years or so. (Compare this with Henry James' 27 years, or even Charles Wilson's ten years). Nevertheless he felt that he had the measure of the Survey and knew what had to be done. In 1897 he had found it 'an exceedingly well organised department' for the production and revision of large scale plans, faithfully executing procedures introduced by Colby 70 years before. Little thought was given to training for overseas service or for war and when Close commented unfavourably on the state of the trig records his chief minuted 'In spite of our inferiority we seem to have done pretty well hitherto'.¹⁶

Clearly things had progressed by 1911. Not a few officers and men had served overseas while colour printing was now the norm for small scale maps. It was though characteristic that Close opened his first OS Annual Report with a 'General review of the operations of the Ordnance Survey and of the work which lies before it'. He identified four groups of duties:

¹³ *Geographical By-Ways*, 112.

¹⁴ 'We might have occasion in the future to invite a chastened Germany to join again', Winterbotham to Hinks, 6 October 1914 (RGS archives).

¹⁵ E. Meynen (compiler), *International Bibliography of the 'Carte Internationale Du Monde Au Millionieme'*, (*International Map of the World on the Millionth Scale*), Bibliotheca Cartographica, Sonderheft 1, Bad Godesberg, 1962, reviews project up to that date, crediting GSGS and OS (and by implication Close) with the publication of the very first sheet in the series, SH 34, *Kenhardt*.

¹⁶ Close, 'Fifty Years...', *ESR*, I, 199.

(1) The completion of the 1:2500 map of Ireland and the revision of each sheet of Great Britain once every 20 years. Plans at larger, 'town', scales should be prepared or revised when required.

(2) The preparation of official small scale maps. No one-inch sheet should be more than 15 years out of date when issued to the public.

(3) Training surveyors for service in colonies, protectorates and self-governing dominions.

4) Providing specialised mapping services for various Departments of State, for example to show the density of London traffic.

He described some tasks pending, drawing attention to the unsatisfactory state of contouring of areas above 1000 feet. He concluded: 'The Department which ignores its scientific duties tends to fall into routine and to adopt a habit of accepting methods which are supposed to be just good enough, but which, as a fact are never good enough in the long run.'¹⁷

Like a good regimental officer, Close had first to secure a square deal for his men. Pay and terms of service for civil assistants were reviewed, evidently to their satisfaction. Scientific work was revived and the second geodetic levelling launched. The Irish 1:2500 was completed while Close directed his thoughts to the amelioration of the difficulties caused by the plethora of meridians employed for the county series maps and plans of Great Britain, a task hindered by the loss of trig records. In the end only 5 out of 43 meridians were eliminated before financial stringency terminated the project.¹⁸ The demand for larger scale plans for valuation and land registration was met by photographic enlargement from 1:2500 to 1:1250 rather than by any revival of the old 'Town Scales'.

However all hopes of maintaining the large scale revision programme were destroyed by the First World War, through loss or diversion of manpower. Finally in 1918, in response to the Select Committee on expenditure, it was decided that the more thinly populated counties could only be revised once every 40 years.

For contemporary map users, as for present day collectors, Close's most significant impact was on small-scale map production. He was not a cartographic radical. As late as 1916 he advised against the inclusion of cartographic drawing in a training scheme devised by the RGS on the grounds that first quality work could only be obtained by engraving on copper¹⁹ and one of his steps on taking over at Southampton had been to ensure that the Irish half-inch would be so produced. (Nevertheless by 1919 he was ordering preparation for a new, hand-drawn one-inch map of Scotland). Looking at Close's influence on the small-scales it can be seen to progress from an initial experimental stage, largely using existing engraved base material but enhancing this by the imaginative use of colours. The best known example was the *Killarney* one-inch, even though, as Winterbotham unkindly pointed out, it owed its success as much to the finger of God as to the hand of man. From such experiments, for example from the Keswick

¹⁷ *Ordnance Survey Annual Report*, 1911/12.

¹⁸ See Brian Adams, '198 Years and 153 Meridians, 152 Defunct', *Sheetlines*, 25, (August 1989), 3-7 26 (December 1989), 15-20 and 27 (April 1990), 3-9.

¹⁹ Note dated 26 November 1916, (RGS archives).

extract in the second edition of Close's *Textbook*²⁰ we can get some idea of what might have been achieved but for a regrettable incident on the streets of Sarajevo. However in retrospect the 1914 prototype 'Popular' of *Aldershot (South)* was more significant. Despite its use of existing base material it seems more in keeping with Close's 'ideal topographical map' of 1904/5 and the clean austerity of his GSGS productions.

There was no point in producing maps which were not used so the next step was to promote sales. A confidential committee made a wide-ranging set of recommendations, including the more rigorous enforcement of copyright, a more effective network of agents and placing maps in attractively designed covers which would afford better protection in use. The war delayed action but once peace returned Close invited Ellis Martin to join the Survey with rather dramatic consequences for how its products were seen by the outside world.

It is impossible to do justice here to Close's and Ordnance Survey's contribution to the allied cause in the First World War. Its men were the backbone of the survey units in France, while back at Southampton millions of maps were printed for field use. Close was denied the opportunity to go on active service. Instead he was the back-up man, called over to France once or twice to give advice and encouragement to men like Jack and Winterbotham whose careers he had advanced, otherwise minding the shop with dwindling resources, faced with new problems such as the re-definition of parliamentary constituency boundaries and meeting the first wave of demands for post-war economy.

In 1918 peace could be welcomed but many of its consequences could not. The impending separation of the Irish Survey would mean a reduced establishment but further cuts were demanded by the Treasury. Close seems to have accepted the first wave of economies as part of the necessary sacrifice which all must bear to pay for the war. What he resented was the second round, the notorious 'Geddes Axe' of 1922, as he felt OS was one of the few departments to make genuine economies in the earlier phase and should have received credit for this.

Close's last years in office were clouded by increasing staff discontent. Nonetheless he did not give up. New small-scale maps appeared, such as the English 'Popular' one-inch, the layered quarter inch and an increasing number of Tourist and District sheets. An Archaeology Officer and a Research Officer were appointed. The former, O.G.S. Crawford, was to make a major contribution to the Survey's public image as a forward looking organization despite the hard times.

In retirement Close did not forget his obligation to the Survey and through speech and writing sought to foster a positive view. His final contribution was perhaps his far seeing evidence to the Davidson Committee in which he linked present and future demands for maps to demographic trends.²¹ He opposed any changes in map scales unless the metric system was to be made obligatory in which case 'very soon we should find ourselves obliged to re-contour Great Britain': prophetic words.

²⁰ *Textbook of Topographical and Geographical Surveying*, by Colonel C.F.Close, revised by Captain E.W.Cox, London, HMSO, 1913, Plate XXIV.

²¹ 'Memorandum prepared..... by Sir Charles Close', 24 January 1936, OSC 59, Minutes of Evidence, Davidson Committee, (OS Library, File G 5186); Sir Charles' verbal evidence is precised in Paper OSC 86 in same file.

It remains to re-assess our man. Most witnesses present him as mild mannered, a father figure to his staff who would go to great pains to avoid a row. Correspondence suggests that nonetheless he could sometimes be insensitive or even tetchy. In 1911 his presidential address to Section E of the British Association was seen as almost treasonable by the RGS's inner circle for its criticism of the intellectual aspirations of geographers. Years later as the Society's President he could drive the Secretary to distraction by authorising the re-arrangement of the New Map Room furniture in Hink's absence.²² The impression received is of a man considerate of those around him but who, if he felt something should be done, went ahead, regardless of whether a few eggs might be broken. Consequently in a long and active life he marked up a remarkable range of achievements.

Standing back a couple of decades these achievements may seem to dim a little. His fine schemes for African mapping only bore limited fruit. The International Map project never really prospered as a collaborative venture. His scheme for consolidating the county series maps and plans petered out for lack of funds but could be said to be flawed because of deficiencies in the original data. Finally had Close not co-operated so conscientiously in the post-1918 economies might the blow of the Geddes Axe have been blunted?

If we look today for physical evidence of Close's career we can find all but one sheet of his engraved Irish half-inch map still in print and that massive blockhouse on the corner of Exhibition Road that houses the RGS lecture hall, where Close's name has joined those of other giants of the past. We can though take a more detached view of the man and his works. If we see him as the last of the giants it is because he was a man of his time and his time was one of change. In his memoir he contrasts his relationship as DGOS with his first Permanent Secretary, an administrator of the old school, who never interfered in the internal running of the Survey but whose experience could always be sought when needed, with his less happy relations with his successors. Many years later Winterbotham was to caricature this change, contrasting the Victorian DG 'X', corresponding with fellow members of the scientific elite, with his Twentieth Century successor 'Y', embroiled in the petty minutiae of office.²³ In this new world the simple direct approach, such as dropping in on Cecil Rhodes to secure the use of the British South Africa Company's telegraph network, no longer worked as it had.

Despite this Close offers us a legacy. High flown language can be translated into practical action by dedicated men. Concentration on immediate tasks should not be allowed to obscure a broader vision. But above all he must be remembered as a man who through speech and writing, and by imaginative moves, such as his invitations to Martin and Crawford, caused Ordnance Survey to be seen as more than a worthy, but dull, body beaver away behind the scenes. Rather it was to be recognised as a national institution which if it could sometimes generate irritation, as well as respect, from its public could equally stir a loyalty which, when threats were perceived, would generate letters to the press and questions in Parliament.

²² Close to Hinks, 12 September 1928: 'There was a need for immediate action', (RGS archives).

²³ Brigadier H.S.L. Winterbotham, 'The Ordnance Survey', *Empire Survey Review*, VI (1942), 450-458.

Acknowledgments

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Sources and References

The fullest account of Close's professional life is to be found in his memoir, Col. Sir Charles Close, 'A Fifty-Years Retrospect', *Empire Survey Review*, Vol I, pp 146-150, 194-200, 242-248, and Vol II, pp 2-6, 66-73, 130-137, 194-200, 258-264, 322-328, 386-391, (1932-34).

His wide ranging interests earned him many obituary notices, probably the most useful of which is that by J. de Graaf Hunter in *Obituary Notices of Fellows of the Royal Society*, Volume 8, November 1953. A later memoir by T.W. Freeman, *Geographers Bibliographical Studies*, Volume 9 (1985) emphasises his geographical interests. Both de Graaf Hunter's and Freeman's bibliographies are very incomplete.

Close's years as Director General are discussed in W.A.Seymour (ed.), *A History of the Ordnance Survey*, Folkestone, 1980.

His performance as historian of that organisation was assessed by J.B.Harley in his introduction to the David and Charles reprint of *The Early Years of the Ordnance Survey*, Newton Abbot, 1969.

Close's wide ranging interests have lead to collections of his papers being deposited in a number of institutions. Those consulted for this paper included:

Royal Geographical Society: African diaries. (Apparently tidied up c. 1940). RGS correspondence. International Map of the World.

Ordnance Survey: Correspondence on map projections (mostly post-retirement). Submission to Davidson Committee.