

Memoir of an English Lighthouse Engineer

AN AUTOBIOGRAPHY BY KENNETH SUTTON-JONES

PART II

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CHAPTER III

The Crucible

A Time of Trial and Testing

The early years spent at Chance Brothers lighthouse works had taught me how and why each component was designed and made, so as to render the years of reliability while requiring remarkably little servicing. Accordingly, I had appreciated how specially skilled the designers had been. They were ably emulated by very committed successors of whom we were very proud. Notable was Harold Gough, a giant in glass technology and optics. Wally Cooper was our mechanical engineer and the grand-old-man of our time; Uncle Bill Richey had assisted with the design of the truly massive apparatus for Bishop Rock in 1892. A little older than I were Harold's assistant, Bill Dimmock, and



The Chance Brothers office staff.

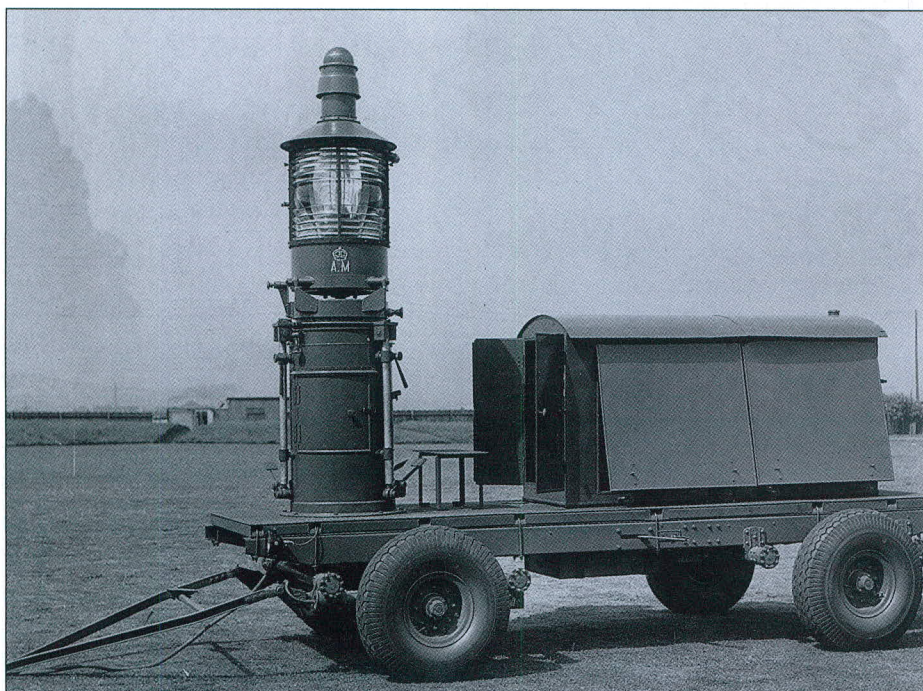


Wally's assistant, Len Neenan, both excellent draughtsmen and engineers.

Greatest of all benefits was my growing appreciation of the skills amongst the workshop men, so ordinary yet special in individuality and immense ability. They were truly splendid to work with, blunt and to-the-point, but kind and helpful. As a product of a so-called public school, I had much to learn from them. I needed to alter the general attitude of the average southerner towards those who work well with their hands, and invariably, with their brains.

To back up the whole enterprise Chance Brothers had chemical and physics laboratories under eminent scientists, notably Dr. W.M. Hampton, Dr. Bastick and John Holmes, who gave support to the expert lighthouse engineering staff. The works manager, J.W. Dodds, was a stalwart and highly respected impressive manager of men. The chief draughtsman, George Nicol, the general office manager,

The Chance Brothers Memorial Fountain in West Smethwick Park.



Left - Portable airfield light.

plier of optical glass for gun-sights and many such wartime necessities. To cover the eventuality there was talk of a 'shadow' factory coming on-stream somewhere in Wales. The 'lightus' became extremely busy on many contracts for special beacons for securing safe landing of returning aircraft, and for the training of night-fighter pilots by use of sodium illumination. We constructed the lighting apparatus and the power supply unit with its associated switchgear, all mounted on a trailer. The specialized automatic engine-driven power plant was turned out for the war requirements in great variety and quantity.

The 'Chance Light', well known by Royal Air Force, required a large beam of reflected light to provide sudden illumination of a landing strip at short notice. The general requirement was for a horizontal electric filament illuminating a very large parabolic backing mirror. Two such assemblies of horizontal filaments and mirrors were envisaged. They were to be superimposed, mounted in a protective housing on the end of a rapid deployment trailer, complete with a powerful engine-driven generator plant. The accuracy of each mirror was crucial and proved to be beyond the capacity and capability of a metal mirror beaten into shape, which produced only a 'feathery' beam. Heads

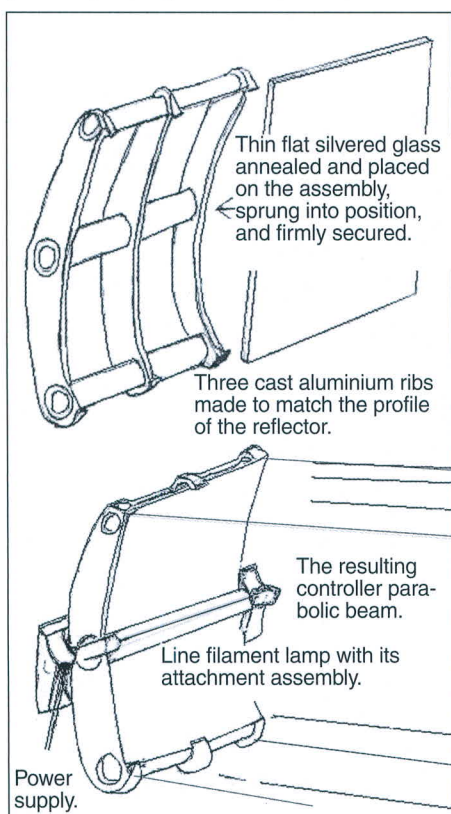
James Lord, and the estimator, H.J. Hipkins, were true characters and elder 'statesmen' amongst the staff (as shall be revealed in this and following chapters).

Housing in the locality was adequate and provided most of the work people with fair comfort despite having been built during the nineteenth century. All was within a highly polluted, smoky, and chemical-laden atmo-

sphere of the extensive factory area. The corner bath house was well patronized by workers in the Chance 'glassus' and 'lightus', for many endured hours perspiring in front of a furnace or amidst the grime in a busy workshop. Outside the 'fresh' air contained much sulphurous smoke. (I counted eighteen high smoking chimney stacks in a radius of under a half mile). Metal window frames corroded and catches fell off. So perhaps once a week my fellow worker took soap and towel with him and en-route home called at the 'bathus' in preference to taking a tub in front of the fire in the sitting room at home.

To alleviate the arduous conditions, the Chance family had endowed the region with land that had developed into beautiful parks and gardens (West Smethwick Park, Victoria Park, and Sandwell Park), all excellent public amenities. They also endowed churches and a technical college. Whilst take-home pay was considered meagre by modern standards, the fringe benefits available to the Chance Brothers employee were very considerable. They engendered loyalty to a marked degree where one generation was followed usually by a second and even a third in many families.

In September 1939 war was declared between England and Germany, much to a public sense of inevitability and foreboding. The whole region had been virtually on a war footing for some months, we half expected to be blown and blasted to kingdom-come by air attack, which mercifully, was deferred some months. Chance Brothers were the sole sup-



Harold Gough's solution.



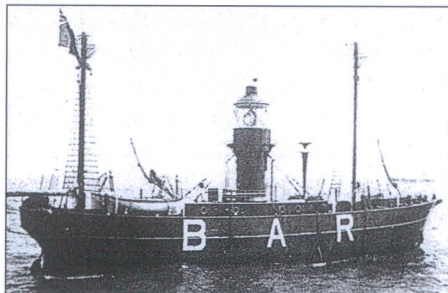
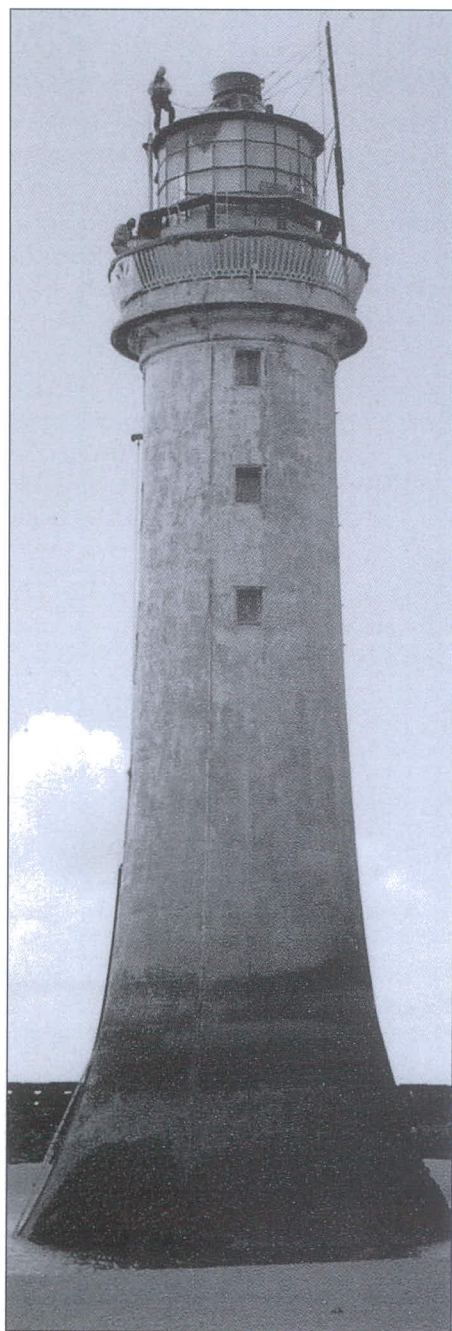
Kenneth as a member of the Home Guard at the Chance Brothers company.

were scratched to find the solution, whereupon Harold Gough's genius was displayed. His plan featured a very rigid profile former behind the mirror to ensure that it closely followed the true parabolic form. This profile former consisted of three aluminium castings, profile machined together on a vertical boring mill by means of a profile follower tool. This produced three identical surfaces, each three inches wide and they were held together to form the mirror backing by three tubular supports that held them together. This assembly had retaining plates at each end of the parabolic former—here came the stroke of Gough's genius, for they had made a very thin,

large rectangle of glass that was specially annealed in a lehr (a type of furnace) and silvered on one face. This whole element measured perhaps three feet long, one and a half feet wide. It was then very 'whippy', so that when it was held to engage with the lower lip in the profile former, it was then sprung so as to take up the form set by the three former castings and finally slotted into the upper lip. It produced an immensely accurate parabolic mirror that when illuminated by its line filament, provided an extremely powerful and accurate beam of light.

We worked with great enthusiasm in those wartime days with very long hours, immense camaraderie, and with purpose on so many items of important equipment. The whole Chance factory, which covered many acres, had a new look—camouflage painted all over its buildings, chimneys, and kilns. It made the whole area resemble something entirely different, with a road and small buildings, complete with windows. The idea was to confuse the enemy's aircraft so that they would drop their bombs on a less strategically important area.

However, our electrical workshop, now my working place, was struck a blow at a critical time and, suddenly one morning, was ablaze internally. The structure suffered little damage, then we were all engaged in removing everything we could out into the yard whilst the sparks and soot rained on our heads. Work benches were rearranged in the open where we resumed work, hauling tarpaulin covers over everything when it rained. It was thought that a firebomb had struck the roof during a recent air raid. Hasty refurbishment was the order, but meanwhile, we were accommodated in some redundant tram sheds opposite our factory's side entrance. It was a cold, leaky and miserable accommodation that we had to endure pending completion of the repairs. I was engaged on inspection and testing of switchgear and electrical items and also on power plant performance tests. A certain amount of night work was required, notably testing a power plant destined for Russia.



Two important lights at the entrance to the River Mersey: Rock Lighthouse on New Brighton Seafront and the *Bar Light Vessel*. Both are locations where Kenneth made repairs.

Along with many other employees, I joined the Home Guard, which required street fighting practice on Sunday mornings after the parade. One night a week I had to keep guard at the factory, so with a very long day extended by college attendance two nights a week, and by a Sunday parade and a night guard, one reached 12 noon Saturday with a sense of relief.

The first few months of the war were relatively calm without heavy air raids. As the war intensified, so did the assault upon our industries. Massive raids occurred at night, later at any time of day or night, upon our major industrial cities. This included the massive complex of the Black Country, including our own Chance Brothers plant together with nearby Birmingham's factories. Precautions to duplicate production of optical glass had already been taken in the form of a satellite plant 'somewhere in Wales', but work at Smethwick continued flat out. When sirens indicated the onset of air attack it had been usual to dart for the shelters, but it wasted valuable production time. Accordingly, our Home Guardsmen became trained in spotting enemy aircraft 'on course to hit us'. I spent weary hours at night perched atop a factory roof listening for aircraft that were set on an approach course. Then one pressed a button that sounded a buzzer throughout the factory alerting all to run for the shelters.

Morale throughout Britain fluctuated at first but as war progressed almost everyone became absolutely bent on victory, tolerating no weakness of resolve. A truly superb spirit was engendered throughout the nation.

After the attack by Japan upon Pearl Harbour, America entered the war and supplies came across the Atlantic in convoys in great strength. Approaching the River Mersey entrance to the Port of Liverpool, a vessel struck the *Bar Light Vessel* amidships, its stem causing the light vessel to roll and to strike the other vessel on the rebound. The light vessel suffered stoving-in of her lantern's framework and damage to the optical apparatus within. The collision had taken place in daylight on a clear morning.

Ernie Barratt, our Senior Site Engineer, and I were instructed to proceed in haste to Liverpool. We took a prepared case of spare parts and tools so that we could restore the light to its normal functioning. The lantern framework had 'diamond and half-diamond' shaped glass panes in substantial frames of



The lens and equipment in Bishop Rock Lighthouse. The size is readily seen by comparison with the keeper.

gunmetal that we had to bring into true shape using a 'Jim Crow' screw clamp. During the process of doing so, the clamp could spring the components into the air, so we had to tie every component by rope attached to the railing of the lantern gallery. The parts could then be retrieved and the process continued. The resetting of the lens prisms necessitated adopting the process described in the previous chapter, with the 'horizon' in the form of a lamp located on the vessel's mast at the appropriate height. Altogether the process of repair took us three weeks to achieve. The light vessel was then able to resume its duty station.

About two years later I was called upon to reglaze the lantern on the Rock Lighthouse at New Brighton located on the starboard-hand side of the river when entering Liverpool. Sixty-four very large panes were laboriously set in place in a gale of wind atop this high tower; only one was broken. I am, however, racing ahead of myself for life did not only consist of Chance Brothers and its importance to the war effort.

Having good Christian friends through membership with Crusaders, I still managed to attend most of the weekly afternoon meetings on Sundays. First at the central Bir-

mingham venue six floors above the streets in a cafe at Five Ways, later at Harborne, and then finally at Kings Norton. With Leon Strudwick, Rod Walton, Percy Jones and others we went walking in the lovely countryside to the west of Birmingham. On Saturday afternoons we went to meetings in the city centre where young Christian men and women met to listen to well-known Youth for Christ speakers. This was before the American evangelist Billy Graham came on the scene. There was much interest amongst the seekers for standards and matters of faith. Most present knew that they were likely to be called up into National Service, so inevitably did it seem that war loomed. One Saturday afternoon I was amongst the crowd leaving the meeting when I could not help noticing a young lady pass by, a prim figure, stepping out with a short rolled umbrella held rigidly in her right hand. She was swinging in step as on parade, with a distinctive hat on her head, determined to outpace us all. I learned later that she was on her way to a cream cake consuming session with her friends. It turned out to be an ominous moment indeed.

During our Sunday meeting a bright young Crusader, Tony Southam, piped up, "My dad is a sort of vicar." Further enquiry revealed that he was Pastor of a Baptist Chapel at a place called Lapal, about eight miles to the west of the city, in the country. Being earnest in our leadership and keen to back up the member's father, three of us decided to attend an evening service in the recently completed New Carters Lane Baptist Church. This was 19th October 1939 and coincided with the very first occasion for all buildings to be 'blacked out' to exclude all lights that may help an enemy. At the conclusion of the service we were to have our last moments of chatter within the entrance vestibule that needed no blacking out, as it was almost dark. In the crush that followed, I collided mildly with someone who—God bless my soul—turned out to be the umbrella-bearing young lady! We politely apologized, discussed the weather and said how pleasant was our having met. Not seeing her face before, I realized upon reflection that I had noticed her during the service sitting in the choir. Two weeks passed and, rather than attend St. Johns, Harborne as usual, perhaps I would walk westwards to Carters Lane for a morning service, the preaching had certainly been good. Peradventure I might even catch a sight of my delightful acquaintance and, indeed I did and we walked up the lane

together (not for the last time). On the next occasion I was introduced to her father who had been the kind, tall person at the chapel's entrance who had greeted us all so warmly and proffered a copy of the hymn book. She spoke of her mother and younger sister and, in due course, I was invited home for lunch and in to the bosom of a delightful Christ-loving family, with kindness previously rare in my experience since leaving home.

Days at school, even in adolescence, provided meagre opportunity to meet the opposite sex and Crusaders was an all-male preserve. My cousins, Rosemary and Barbara Clarke, were close and good friends and occasionally I met Marion and Alison Burrows during wonderful holidays in the country at their home in Benenden, Kent. There were fishing trips to the local pond and they were happy times. I was spared any serious girl friend.

But Phyllis was different—she had light golden hair and green eyes, was unsophisticated, companionable and a firm Christian, who loved music and seemed not to notice my raggedness (caused by years in digs and lacking any capability with needle and thread). There was no doubting that we liked one another and, indeed, were soon in love (but, by no means co-habiting as would be normal today). In our case this was to be five years later. Meanwhile, we were at war and times were to be perilous.



Phyllis, the future Mrs. Sutton-Jones in 1940.

The Wilkins family (for that was Phyllis's maiden name) resided in a semi-detached house in Compton Road, Quinton, the westernmost suburb of Birmingham (now Halesowen, West Midlands) atop a high ridge more than a thousand feet above sea level. Here the wind indeed did blow and we had snow for several weeks in winter. As the Birmingham Corporation bus reached the top of the hill at Quinton Church, the conductor (for all buses had conductors or conductresses) yelled out either "Siberia" or "World's End". "No use having a brolly in Birmingham. The rain do' cum down vertical, only horizontal, due to the wind." Phyllis had a job in the Pre-paid Accounts Department of The Shropshire, Worcestershire, and Staffordshire Electric Supply Company, known as 'SWS'—in my terminology, 'Swizzlem, Wangle, and Screwtite'. This office block dominated the top of the ridge known as Mucklow Hill and overlooked truly beautiful countryside in a valley and up to high, dominant hills beyond. Clent and Walton and Romsley Hills were in a ridge to the west, which became our beloved courting ground (never to be forgotten).

On a Saturday we would go on the Midland Red bus ('buzz' in local dialect) to the Lyttleton Arms near Halesowen, alight, and walk about three miles on a delightful pathway to a country church of St. Kenelm, and beyond through woods to the summit of Clent Hill, with its woody top knot and four large stones. From this point one surveyed many counties—the distant River Severn near Gloucester, Malvern Hills, Clee Hill, and the Ankerdine Hill. We absolutely adored this panorama. However, we were 'noticed' and came across my other friends who seemed 'poleaxed' at Kenneth with a girl friend. Later I was to receive a letter from one dear friend who felt Ken was on his way to the Devil. (He regretted this later and possibly ever since.) We would return by bus and cook our week's egg and bacon ration for supper. We were very much in love and from this time hence, have always prayed together (a practice one could recommend, seeking God's way together through life). Phyllis's father and mother were the embodiment of kindness and wise counsel. Will Wilkins was one of four brothers (one died young) and each had his special brand of dry humour. There were some very stalwart Christians at Carters

Lane Church, including several males and very many ladies of high rectitude with the name of Grieves. The Guests were a similar set of brothers and sisters and cousins, etc. Phyllis's father always joked that, "He Guest it would Grieve him." I was fortunate to be able to change my lodgings to the home of Mr. and Mrs. Leonard Guest. He grew prize delphiniums and was a very skilled plasterer by trade. There were highly ornate ceilings in all the main rooms of his home.

From the ages of twenty, Phyllis and I knew we were meant for each other, and in retrospect, it was certainly part of God's plan for us (Psalm 37:4,5), but marriage was to be almost five years ahead. Meanwhile, a war had to be endured and won.

But I am going ahead too fast again and must re-enter the pre-Phyllis era. Having been at Chance Brothers for just over a year, I developed periods of fever and sickness and entered Guys Hospital for tests that revealed a condition known as haemolytic jaundice. This had to be corrected by an intake of a tablespoonful daily of Glucodin and a ban on fats for a prolonged period of two years. The long hours standing on a factory floor and the general privation of living away from home in lodgings, which whilst adequate (just), had few home comforts. Added to this was the need to attend college in the

evenings and study in a cold bedroom with linoleum floors. No, it did not drive me to getting married. Yet. Following the period in hospital I had to return there to the dental department to have my teeth drained due to the jaundice. It was a revolting and agonizing experience.

War started in September 1939 but, prior to this, my mother, brother and grandfather moved into rented accommodation in Cornwall whilst my father carried on his work in the city of London. Eventually his company's office staff were moved to Bath and my parents and grandfather were together again in a flat situated adjacent to Pulteney Bridge with stupendous views down the river to the hills beyond. However, before this, my parents returned briefly to their home in Shirley, Croydon. I was able to see them once a month travelling from Birmingham on the Saturday and returning on Sunday evening. On one such visit Mother challenged me because she had heard that I had a girlfriend; she thought it 'far too early and you must devote yourself to your work more diligently, Kenneth.' (I was then 20 years old and I knew that my father courted my mother during her mid-teens and married her at 22.) "I don't want to meet her Kenneth", but I retorted that I would bring her with me next weekend, which I did, and they fell in love with Phyllis from that moment.



The Midland Red bus at Bearwood, much used by Ken and Phyllis during their courting days.

Phyllis had many fine friends at Carters Lane Church and in Christian circles. She later admitted that when she first saw me on the evening of the 19th October 1939 she was horrified to note my thin and run down appearance and felt so sorry for me that she asked her mother to invite me to meals. My very dear friend, Wilfrid Dickinson, then at theological college in Bristol, came and stayed at my lodgings for a weekend. We were both very firm in our mutual regard and I introduced him to dear Phyllis, and when we were alone, I sought his opinion as to the suitability of Phyllis. His reply shall never be forgotten. "Ken, you must snap her up" and snapping his fingers to emphasize his delight at meeting her.

I helped weekly at Harborne Crusaders class where some thirty boys were members. This followed the weekly parade with the Chance Brothers Home Guard Company but, after tea at Phyllis's, we had friends around the piano and sang from the CSSM Book. This rounded off many happy evenings in amongst her loving and caring family.

Phyllis's Uncle Arthur always came to tea and the dry humour twixt Will and Arthur was an experience to recall. Arthur Wilkins, a bachelor, dearly loved his nieces. He provided so very many surprise gifts and holidays, including a school pupil's Mediterranean voyage, which otherwise would not have been possible. Uncle Arthur was a foreman in British Pens factory in Smethwick. Phyllis's father worked very conscientiously as Despatch Manager at Foster Brothers Clothing Company organizing the maintenance of supplies to over one hundred branches countrywide. Phyllis's mother, Edith Emily Wilkins, was a marvellous cook and produced superb food for us all. She struggled valiantly against the physical effects of the difficult birth of Phyllis's younger sister, Hazel. Phyllis's father would refer to me humorously as having been "born on a Friday and must have been dropped when he was young".

Meanwhile, life in 1940 became ever more intense and dangerous. The constant reminder of the industrial giants all around was typified by Walter Summers's steam hammer pounding enormous forgings in metal night and day, with its characteristic whistle followed by an earth-moving 'thump'. The build-up to the Battle of Britain days was upon us and would culminate the following spring when the 'few heroic spitfire fighters' shot down hundreds of German bombers as they approached southern

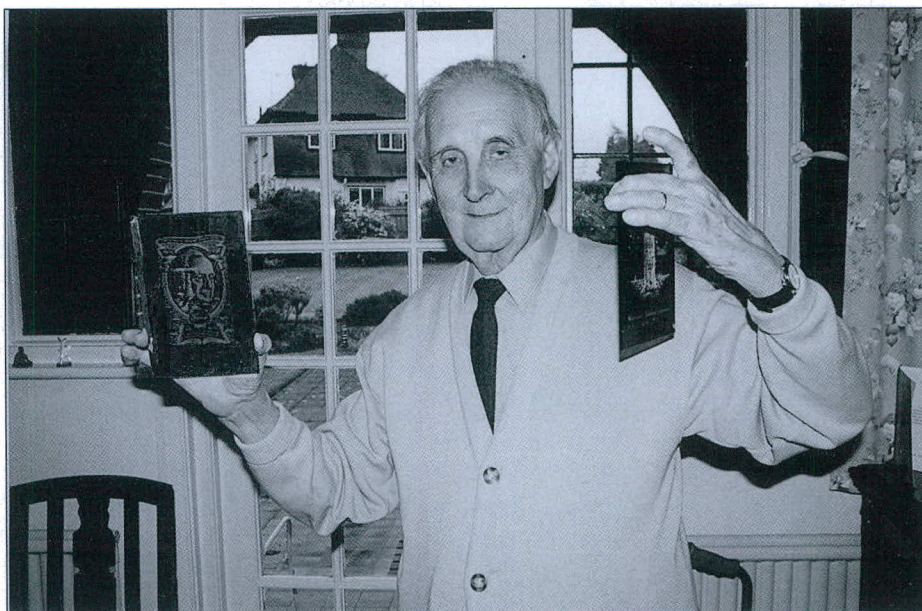
England. Their heroics changed the fortunes for us, leading to eventual calamity for Germany.

Whilst working at SWS Phyllis entered for an intensive evening course in first aid and home nursing, during which time she made a commitment to Christ as Lord. Accordingly, when her papers arrived calling up young women into the Forces, she decided to offer her services for nursing. (The choice, in addition to nursing, had been to join the Women's Army, Air Force, Naval Services, or the Land Army.) In due course, she was called for training as a nursing auxiliary at a hospital in Bromsgrove, about six miles from her home. This lasted for several weeks, terminating in an examination at which she placed first of the nineteen women on the course. Jean Calderwood came second. At this stage we all wondered how far apart we might become, but to our surprise and delight, the two women who had grown to be close friends as Christians, were assigned to the same hospital (St. Chad's at Five Ways, Birmingham). Here they shared the same two-bedded nursing billet within the hospital. St. Chad's was the general hospital for the district with all services (medical, surgical, maternity and children) but, due to the war, became an overflow for wounded service personnel from other various hospitals. Under the very fine and exact management of Matron Lodge (related to the celebrated sci-

entist, Sir Oliver Lodge) the hospital was run as a regime. A strict one to the highest standards was demanded of every member of staff as a matter of complete compliance. The work was extremely demanding and exhausting over very long periods of duty. It thus resulted in Phyllis being equipped so well for life ahead.

At Chance Brothers the word soon went around that, "Yo know our Ken, ees-a-going with Phyllis", who because of her Smethwick parentage (and former prowess at the principal school) was well known. This had the effect of making the 'stook-up southerner' somewhat more acceptable to my youthful colleagues. Whilst Phyllis was in touch with her nursing friends in the maternity ward at St. Chad's, several of my married mates had wives in labour, so I became the bringer of glad tidings from time to time. Meanwhile, I was able to see Phyllis during some off-duty periods, walking three miles so as to have half an hour with dear Phyllis, strolling together around the hospital's perimeter. There were longer periods off duty enabling us on occasion to have half-a-crown seats together at the City of Birmingham Symphony Orchestral concerts in the Town Hall.

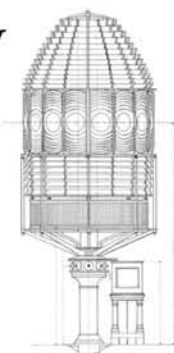
The hospital's Chaplain, Rev. Roberts from St. Mary's, Bearwood, became a special friend to us both and so very helpful when the time came for us to arrange our wedding, as will be related in the next chapter.



On 6 June 1951 Chance Brothers held a sumptuous dinner at Savoy Hotel in London to celebrate its centenary. The menu was bound between two panes of coloured antique glass; a red etching depicted James Timmons Chance, founder of Chance Lighthouse Works and, green, Winstanley's Eddystone Lighthouse. Among guests from many nations, of course, was Kenneth Sutton-Jones. Here, in June 2005, he was coaxed into a photograph while holding his mementos. (Photograph by Kim Fahlen.)



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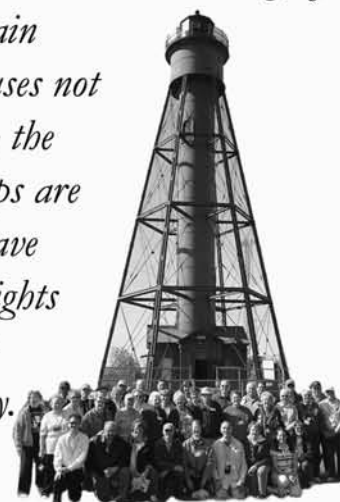
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