Otterburn XL Journal

(2021)

Contents

Preface from the Secretary

Members,

I'm pleased to welcome you to this year's bumper edition of the Otterburn Journal.

Our chairman has written a splendid introduction, and I am grateful to the four members who have taken the time to submit contributions. This year, our Heraldic Officer has provided a lively description of fourteenth century rugby tours; The Director of Public Affairs explains why a telescope shop will shortly be opening in Otterburn; The Milk Marketing Board Liaison Officer has launched an essay competition with a mystery prize: and finally the Director of Music describes the launch of the 'Project Hettiaratchi Challenge'.

So, put on your nightshirts and night cap, light a candle, get out your best cut-crystal glass and fill with fine brandy – then relax into your armchair and enjoy.

Jeremy Featherstone

Secretary to the Otterburn Society, 2021

13th August 2021

Introduction from the Chairman

Mandale House
Elm Bank Road
Wylam
NE41 8HT

12th July 2021

FROM THE OFFICE OF THE CHAIRMAN OF THE OTTERBURN SOCIETY

Gentlemen,

It is my great privilege and honour to have been invited to introduce this year's Otterburn Society Journal.

Firstly, may I congratulate Secretary Featherstone on his efforts to revive this worthy publication. He has held this esteemed office for several years and it gives me great pleasure to finally see a new edition of the OSJ go to print. I never thought I would see the day! Well done SOTOS.

Thanks however must really go to the contributors who have taken the time and effort to put pen to paper. Without your contributions the OSJ would not have happened. Contributions are of the usual high standard and a lasting testament to the enduring institution that is The Otterburn Society.

Publication of the OSJ has traditionally signalled the start of preparations for our annual conference celebrations. 2021 is a very auspicious year in that it is our 40th anniversary. We should all be justly proud of being part of something that has not only endured but in recent years has flourished with attendance at last year's AGM at levels not seen since the first annual conference back in 1982. I can assure you that over the next few weeks the committee will be working diligently to ensure Otterburn XL will be enjoyed by all.

In writing this, I have taken the opportunity to look back in the archives to reacquaint myself with OSJ contributions of the past. Six editions of the OSJ have survived the passage of time and I feel compelled to share some of the highlights from four of them:

1983

1983 saw the publication of our first Journal. Cooper was COTOS, ably assisted by Firth (Treasurer) and Burd (Secretary). I did notice in the accounts of that year Firth oversaw an

increase in the annual subscription from £23 per annum to £35 per annum, a 52% increase! That said, it does illustrate how much things have changed since.

Four members made contributions, Burd, Beck, Firth and Moore, on topics as wide ranging as the use of SDRC Frame Structural Analysis Software; the "Wye Double Digger"; growing crops for a milking a herd of 1000 head of dairy cows in Saudi Arabia, and recollections from a "swinging sixties party" held at Nafferton Farm when a bucket of coleslaw accidently got tipped over a member's head, allegedly the current DCPA.

1989

The next OSJ from the archives is from 1989 and produced by the then Secretary Firth under leadership provided by COTOS McKenzie-Smith and Treasurer Scarborough. Contributions were received from nine members with the only non-contributors, in keeping with what was to become a long-standing tradition, being Jemmett and Flack. Contribution themes followed what was to become a familiar and recurring pattern with Wood describing finishing his house; Smith joining the ranks of the married; Beck on the origins of toggie blowing including some personal tips and tricks; Scarborough on the life and times of Sir Charles Parsons, Watson on designing and building the first Irish Space Module; Featherstone on his weekly Turkish bath and Indonesian massage experience while enjoying a Barber's (Otley) "quarter inch Romeo y Julieta Fabilosos" held in a "Doyar" cigar holder; Jordan's annual milk quota update; Firth's Swallow Story that described the moral of a bird landing in a cow pat and Burd's description of the acquisition of a second chipper edger for Senghenydd Mill. It should also be recalled that 1988 was the year that Beck gave us that memorable quotation "If God had intended members to get married and have children… he wouldn't have given us the Toggie".

1994

1994 brought us the publication of another excellent journal, again produced by what was proving to be the very capable Secretary Firth, this time under the leadership of COTOS Thriepland and Treasurer Moore. Contributions again addressed a wide range of topics, the most notable being Scarborough's African themed Algol-W array and variable naming conventions (Teapot and Mkwate for example); Jemmett's description of his attempted foray into the world of burglar alarms; a description of the attempted bribery by Firth of an officer of Pearson Engineering to get member Flack to make a contribution; a contribution by James Barber, the renowned tobacco merchant based in Otley since 1867; Beck's excellent exploration of the popular belief that there are few "Real Men" left in the UK, the moral of which is "Real Men never eat Quiche" and the contention that The Otterburn Society may contain some of the few Real Men left in the UK, even if they are Real Men only during the last weekend of November; Featherstone's marble weighing challenge and Threipland's critique of the variations of Toggie blowing. Finally, Peter Harding of the Otterburn Tower Hotel, Dr JL Woods and Prof. JR O'Callaghan of the Department of Agricultural Engineering were invited to prepare short papers. Except for Harding, they respectfully declined with the Pro Vice Chancellor advising he was "overwhelmed with problems at the moment".

1997

The OSJ produced in 1997 by Jordan is widely recognised as a classic and is my personal favourite. Despite the heroic efforts of Jordan, only two contributions were made, by Firth and Beck. Such shortage was however more than made up by outstanding quality, quantity and humour. As the secretary pointed out at the time, previous OSJs had produced memorable contributions with Firth's assistance, with letters penned to amongst others, Richard Branston – Mates Condoms (JJRF), Greggs Bakeries – Pies and Stotties (JCB), N. R. A. – Work Experience (NJ) and M.A.F.F. – Milk Quotas (AJ). In keeping with this tradition, Firth again set about assisting members by writing letters on their behalf to various individuals on matters of personal concern. Of particular note was a letter to the Commercial Director of ICI from Scarborough introducing ALI-SCAR, a product for removing paint from hair; a letter to the Sales and Marketing Director of Mazda UK from Featherstone with the observation that ladies would find the MX5 more exciting with a more appropriately shaped Gear KNOB; Beck's letter to the Newcastle University Vice Chancellor and Union President decrying the destruction of the Gents lavatories in level 2 in order to make way for a jacuzzi facility and a women's "relaxation area!", and Thriepland's letter to Bishop Skinner, insurers, seeking insurance cover for his Kenjutsu toggie bursting activities. Most letter recipients took the trouble to reply, and the letters and responses received have since become the stuff of OSJ folklore. To share this memorable publication with you I have posted a download link to it here: https://www.dropbox.com/s/0ffeye4djqf7r3c/OSJ%201997.pdf?dl=0

Gentlemen, I commend to you the 2021 edition of the OSJ and I hope you enjoy it as much as I have.

Respectfully,

Randall Flack

Chairman

The Otterburn Society

Beattie, Karl, 'Sir Thomas Grey – Constable of Norham Castle'

Sir Thomas was involved in much daring-do during the reign of Edward I, a period characterised by Anglo-Scots wars. Some of these adventures were chronicled by his son (also Sir Thomas Grey), who wrote SCALACRONICA - an account of the Scottish and French campaigns of the period 1272 - 1363 whilst he was himself a prisoner in Edinburgh Castle. Thomas (The Chronicler) had been inspired to write his tome, having experienced a dreaming visitation from his grandfather, dressed in the monastic robes of a Greyfriar. The original is in Norman French, but it is well worth the effort to read – and I would say that it is easier to read than Chaucher's English from later in the century. I will recount some of the tales of Sir Thomas' (*pere*) gung-ho career below.

Thomas Grey was probably born in the 1270s and was already a man-at-arms in 1297, serving under William de Hesilrig, Sherriff of Clydesdale. In that year, whilst stationed at Lanark, William Wallace and his men attacked and assassinated the Sherriff, killing and scattering his men and torching their lodgings. Thomas was seriously injured – appearing to the Scots to be dead - they stripped him of his armour and left his 'body' naked in the snow amidst the burning buildings. Miraculously, Thomas survived, possibly aided by the warmth afforded by the burning buildings – he was rescued by English reinforcements the following day, eventually making a full recovery.

By 1303 Thomas had been knighted and was serving under Hugh Audley when their camp at Melrose Abbey came under attack from John Comyn's men. Little quarter was given by the marauding Scots and Grey was lucky to be taken prisoner, later to be ransomed.

Grey was present at the siege of Stirling Castle in 1304, where massive siege engines and trebuchets were employed to bombard those defending the fortress. Thomas' commander, Henry de Beaumont, became entangled with the ropes from one of the trebuchets, seconds before it was to be launched, threatening also to launch Beaumont! Sir Thomas rescued him in the nick of time, only to be hit full in the face by a bolt from a springald (a type of giant crossbow). Again, Thomas was taken to be dead. But as arrangements were being made for his funeral, Thomas sat up and asked what all the fuss was about! It is surmised that it was in reference to this incident that Sir Thomas adopted a ram's-head crest, to replace the scaling ladders atop his coat of arms – alluding to his tough nut! NB: With regards to the trebuchet incident, I can find no record of any RIDDOR report for this in the annals of the pipe-rolls, but I imagine that someone was severely reprimanded..

Henry de Beaumont was grateful to Thomas for his salvation and the two men became firm friends. Beaumont was a favourite at Court, and it is possibly due to his influence that Grey was made a Knight Banneret (meaning that he could lead and fight on his own account and under his own colours). In 1307, Grey was given custody of Robert the Bruce's sister, Christina, following her husband's execution for his role in the murder of John Comyn.

By 1308, Grey was Warden of Cupar Castle. Whilst returning to the castle from the coronation of Edward II, Sir Thomas and his 26 men-at-arms were ambushed by Walter de Bickerton, with a force of 400 men. On deciding that the trap couldn't be avoided, Thomas charged straight for Bickerton's men with his lance – scattering men and horses in all directions – followed by his soldiers. Bickerton's men had been dispersed and once they caught sight of a further Grey contingent arriving over the hill, they fled for their lives. The 'reinforcements' had actually been Grey's grooms and baggage train, flying a battle standard. Many of Bickerton's horses were rounded up and driven back to Cupar as spoils of war.

Grey was captured by the Scots once more, during the battle of Bannockburn in 1314 when he broke ranks with the other leaders and made a foolhardy charge… which was then cut off and then cut down by the Scots forces. Not Sir Thomas's finest hour. Luckily, he was taken prisoner. Grey and other men of rank would normally be worth more alive than dead, as they could be ransomed - lower ranking combatants were generally much less fortunate..

It should be remarked that the rules of chivalry were often very quaint – one interesting story in the Scalacronica recounts the tale of a Knight handing himself over to his French former captors, because his earlier rescue had breached the rules. The knight in question had been allowed by his captors to take a morning stroll in the woods, whereupon his erstwhile comrades had happened upon him and affected a rescue. All well and good, however, the French contended that this incident had indeed not been mere happenstance, but that some previous connivance had taken place between the knight and his rescuers to pre-arrange his escape – and whilst rescues were permitted, captives were not allowed to make any attempt at their own escape! The knight duly handed himself back, whilst a suitable ransom could be raised – together with a nominal sum for his bed and board.

In 1317, Henry de Beaumont and his brother Louis (Bishop of Durham, elect) were kidnapped by Guy de Middleton. Middleton was based at Mitford Castle and was notorious for kidnapping and ransoming wealthy individuals from either side of the border. Grey's close friend, William de Felton freed the pair from Middleton's clutches - Middleton was later executed and his lands confiscated. Two decades later, Sir Thomas was rewarded for his services to the Crown with the award of Mitford Castle and 108 acres of land at Howick (confiscated from one of Middleton's lieutenants) - which estate was later enlarged and became home to one line of his descendants, who became the Earls Grey - the most famous of whom was Charles, 2nd Earl Grey, who, as Prime Minister (1830-34) introduced the Great Reform Act and is commemorated by Grey's Monument in central Newcastle. He also had Twining's & Co. blend the now famous bergamot scented tea which bears his name – the tea was so blended to compensate for the peaty tinge to the water on his Howick estate. I digress.

Mitford Castle

Unfortunately, some time after Sir Thomas taking possession of Mitford Castle, the stronghold burned down. History doesn't record the cause of the fire, but it is unlikely to have been an ill-guarded Romeo Y Julieta!

By 1318 Sir Thomas was forming part of the defensive force of Berwick, when the town was surrendered to Robert the Bruce. As the town had been under siege for 11 weeks, no one had received wages – Sir Thomas was awarded £179 in arrears for himself and his 14 men-at-arms.

In 1318 He was appointed Sheriff of Norham and Islandshire and Constable of Norham Castle and remained in this post for the next 11 years of continual border warfare.

Norham Castle

In 1326 Grey, together with Admiral of the Fleet of The North, John de Sturmy, was ordered to compel ships from Northumbrian ports to intercept Queen Isabella and her lover Roger Mortimer, who were en-route to England to seize the throne from her husband, the hugely unpopular Edward II. Edward had allowed his ally, Hugh le Despencer, to run amok in the Kingdom, dispensing his own summary 'justice'. Grey and de Sturmy both sat on the orders and Isabella landed her small army successfully – the greater part of the Nobility joining her cause against the King, who was forced to abdicate in favour of his son, Edward III.

Edward II was imprisoned at Berkeley Castle, where, so the story goes, he met his end by means of a red-hot poker inserted into his rectum – either way, he was murdered, probably on the orders of Roger Mortimer. Despencer was subsequently hanged, drawn, and quartered whilst Queen Isabella tucked into a celebratory feast. I'm sure that Members will agree with me, that there are better entertainments to accompany a pleasant dinner! But these were harsh times. Once Edward III came of age, it was Mortimer's turn to suffer summary justice, the King executing him for the murder of his father.

I would highly recommend Sir Thomas' (The Chronicler) book, as it gives a fascinating insight into the mindset of the noble and knightly classes of the high medieval period. Each skirmish, each battle - with all the attendant death, blood and gore – all is reported with the enthusiasm and light-heartedness of someone recounting the highlights of an enjoyable Rugby tour.

Visors Down! As Basil might say.

Firth, Charles Basil, 'The impact of Covid-19 on Society'

ABSTRACT

A treatise that identifies the life changes that have been necessary to restrict the spread of Covid-19 and how these are changing communities in the United Kingdom. A vision of the future is described where these changes provide many with a more fulfilled and rewarding existence.

Of interest to members of the Otterburn society, academics, scientists, politicians, psychologists, psychiatrist, the clergy, business executives, town and country planners, economists, property developers, land owners, and the like.

INTRODUCTION

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus and the coronavirus disease (COVID-19) that it causes, have required changes to the way we live and work like no other.

Covid-19 is not the first disease to impact the world however it is undoubtedly the most significant in living memory. Estimates vary but the World Health Organisation (WHO) expect that about three million people will eventually lose their lives to Covid 19 (about 0.04 % of the world population).

Far worse though, in terms of it's impact, was the Spanish flu (1918/19) in which it is believed that up to fifty million people died worldwide, representing over 3% of the entire world's population at that time.

Worse still was the Black Death (1346 – 1353) in which in between 75 and 200 million people are thought to have died. This represents about a third of the world population at that time.

There have been fantastic advances in technology since the Black Death and impressively, several very effective vaccines for Coronavirus have been developed in an extraordinary short timescale.

The virus that causes Covid-19 is not particularly aggressive. A lot worse more recent example is the severe acute respiratory syndrome coronavirus (SARS-CoV or SARS CoV-1) that is also thought to have first crossed into the human population in the far east. The spread of this virus was only brought under control by isolating infected individuals. A vaccine was not made ready for humans. This virus was first discovered in 2002 and not eliminated until 2004, by which time 8089 people had been infected and of these 774 had died – about 10 percent of all people infected.

The modern world will continue to be infected by viruses. The number of deaths will be affected by the extent of measures taken to prevent transmission throughout the world population. Vaccines are unlikely to be able to protect populations quickly enough to prevent loss of life.

This thesis characterises the virus and identifies the measures necessary to combat their spread.

The new way of life and how these have been necessary is discussed.

A vision of the future is also presented in which the modern world serves to satisfy the needs and desires of the population.

HOW VIRUSES ARE SPREAD

Viruses are microscopic particles of Deoxyribonucleic Acid (DNA) or Ribonucleic acid (RNA) surrounded by protein. Viruses can only exist and replicate in animals, plants, and other living organisms.

A virus may affect one organism in one way and a different organism in another. The virus that causes Covid-19 in humans for example is found in pangolins but is harmless to the pangolins.

A virus may be transmitted to one organism to another in for example touch, transfer of a bodily fluid or suspended in water particles exhaled by the organism and breathed in by another organism.

The human immunodeficiency virus (HIV) for example that was first identified in the 1980's can only be transmitted by transfer of certain bodily fluids such as blood, semen and breast milk. It is not found in the air we breathe. Transmission of the HIV is readily controlled by the use of toggies.

Interestingly, research suggests that HIV is thought to have been transmitted to humans from chimps that were killed and eaten, or by the blood of the chimp getting into cuts or wounds on people whilst hunting and not by the more usual means of transmission.

The first known cases of Covid-19 were in Wuhan, China. It is suspected that the virus jumped species from either a bat or a pangolin however the precise source of the first infection in a human is unlikely to be ever proved.

What is known however is that the virus that causes Covid-19, like many other viruses, is a respiratory virus that is spread in the air we breathe.

It is impossible for a person infected with the Covid-19 virus in Wuhan China to facilitate the transmission of the virus to a person enjoying the most convivial hospitality of the Otterburn Tower in Northumberland as the amount of the virus in the air that he breathes out will be massively diluted.

If that same infected man was to travel from Baotou to Newcastle and visits the tower, it is highly likely that he would facilitate the transfer of the virus to someone that is not otherwise protected.

The most dangerous in terms of their ability to infect humans are the respiratory viruses that are transmitted in the air that we breathe.

MEASURES INTRODUCED TO PREVENT THE SPRED OF COVID-19

On 12 March of 2019 the then Prime Minister of the United Kingdom, Boris Johnson, spoke to the nation regarding Covid-19[1]. Many will remember this address where he stated “many more families are going to lose loved ones before their time”.

On 23 March 2019 the Prime Minister outlined how the government was to curtail the spread of the virus [2]. The message was simple “you must stay at home”.

In order to ensure that people remained at home all shops except for those selling essential goods were closed and all social gatherings of more than 2 people were prohibited. Businesses were allowed to stay open but only if suitable measures were put in place to prevent the spread of the virus. People were told that they were to work from home where possible.

These measures were the most draconian peacetime legislation ever introduced into UK law and was an indication of how serious the threat to the nation was.

Stay at home

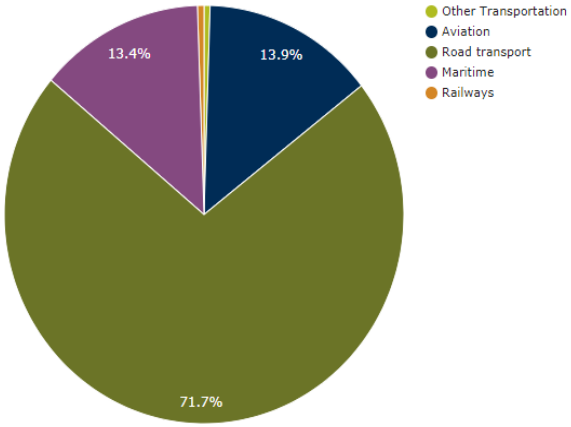
THE IMACT OF THE STAY AT HOME RULES

About 30 % of the workforce immediately stopped commuting to and from a place of work and started to work from home. This change was made practicable by the availability of information technology especially the internet including email and multi participant video conferencing that can be used with a standard laptop computer.

The overwhelming majority of the workforce that were asked to work from home were able to do so and welcomed the advantages that this brought. Not having to take time out of the day to commute immediately freed this time up for relaxation or entertainment. Many benefited financially. At the time many London commuters paid about a fifth of their salary on a rail season ticket[3] and this money immediately became freed up as disposable income.

There were some circumstances where working from home was inconvenient for people but the overwhelming majority benefited.

The pie chart below shows the contribution each transport sector made to greenhouse gas emissions pre Covid-19:



Petrol and diesel sales in 2019 were 30% lower than in the previous year[4]. Air travel was down by 60 % [5]. These figures would suggest that overall greenhouse gasses were reduced overall by nearly 30%. [6]

The closure of retail premises encouraged people to turn online to make purchases. These purchases were delivered directly to the home.

In particular the supermarkets developed their food distribution divisions so that people did not need to go to the stores. Many on-line fulfilment companies thrived. The graph below shows the increase in the share price of Amazon Inc since the start of the pandemic.

At the same time many businesses saw sales fall. Businesses that relied on gathering people together in one place in conditions where the virus could spread were severely restricted.

Nearly all pubs, clubs, restaurants and cinemas were closed. Whilst on line businesses thrived the shops on the high street, that were not allowed to trade, suffered.

In order to prevent hardship, these hard done by businesses were given handouts by the government to pay their employees to stay at home and doing nothing. This was one of the most generous distribution of a country's wealth ever seen. Many bar and pub workers enjoyed a year and a half on almost full paid holiday, which conveniently spanned two summers, whilst the overstretched health service pushed its modestly paid employees to exhaustion. By 4 June 2021 the government handed out £64,000,000,000 in the furlough scheme alone, much of it to support organisations associated with alcohol and gambling.[7]

The closure of shops encouraged retail companies to transfer their businesses online. Many companies have been very successful in doing this and yet still take the handouts offered by the government when they didn't need to.

Despite being intended originally to help companies in need, furlough payments also continue to be made to "super-rich claimants, from Saudi princes to Dubai monarchs, tax exiles to the UK's richest"[8].

About 30% of the workforce can successfully work from home. The majority of retail business is now carried out on line and goods delivered to the home.

SOCIETAL NEEDS

This paper will describe later the new society that will emerge following the Covid-19 pandemic. Before this is presented though, the needs, the objectives, the "operational requirements" of society need to be recognised. This will then explain how the vision of the future will evolve.

- Being part of a group.

Many species have adapted to live in groups. Lions benefit by hunting and defending themselves as part of a pride. A bee on its own would not survive long if it had to live in isolation, it is only by being part of colony that the individual bee can thrive.

There are numerous such examples in nature that have evolved and many of these can be found in the human population. In the beginning, humans formed tribes to hunt together in groups to make hunting, living and indeed perpetuation of the tribe itself more effective.

There are many examples in today's society of groups linked by social, economic, religious or blood ties and these typically have a recognised leader and a leadership hierarchy. Examples of these include golf and tennis clubs, football club supporters, family densities, businesses, organised drug cartels, and the Otterburn Society.

I have observed that individuals often enjoy the hierarchy of groups. A good example is an army where a colonel as head of a regiment enjoys the respect of all the men under him. Although very relaxed in the presence of his subordinates, this same man will behave very differently in the presence of a general and the general enjoys the respect shown to him because of the respect shown to the colonel. Respect is shown at all levels except perhaps the very lowest level. At the very lowest level though, individuals are totally reliant on the organisation for their existence that they are happy to participate in the group. Many will be able to recognise similar situations in companies they have worked for or clubs of which they are members.

Another good example is from the popular television series Downton Abby that depicts life in a country estate in the early 20th century. In this dramatization, the butler, Bates is shown great respect and deference below stairs but not upstairs. Upstairs he shows that same deference to his masters.

Groups of colleagues that work together often form strong social bonds and groups. Colleagues often go drinking together, play football together and often more. Many people spend more of their week within these groups then with other groups (including family) outside the group.

A pre pandemic survey carried out in 2019 found, not surprisingly, that 58% of employees had engaged in a romantic relationship with a colleague.

As well as benefiting from being part of a group, individuals derive great pleasure from this. This is why individuals often find that group activities such as playing rugby, winning in business and participating in politics to name just three are highly satisfying and rewarding.

Individuals thrive and get great satisfaction and enjoyment from participation in groups at all hierarchical levels.

- Being able to live where you want to live

Prior to the Covid-19 rules, most employees were required to attend a central place of work, an office, factory or retail outlet.

This has caused significant social impact. Many families that seek opportunities to progress have found it necessary to move away for work. This disrupts schooling, friendships and family ties. Those who do not want to move often find themselves limited in the local organisations they are able to commute to, leading to an unrewarding occupations.

Neither situation is satisfactory.

People would like to be able to live where they want to live and this is not necessarily within commuting distance of the organisation they would most like to work for.

- Being able to work from home

The working population have little free time and working from home has had significant positive impact on the time available for relaxation and recreation as a result of not having to spend time commuting. Remote working also opens up opportunities to work for organisations substantial distances away from home to which it would impractical to commute.

A secondary important benefit from working from home has been that employees were able to eat more healthily. Employees were able to use their own kitchens to prepare food stored in their homes at lunch time. This has largely improved the choice of foods that people have been able to enjoy at lunch time.

Working from home gives employees more free time and a better quality of life.

- Being able to buy things on-line

The widespread availability of the internet means that literally ever material thing that may be needed can be purchased and delivered to your home. If it is stocked in UK it can often be delivered the next day. This saves countless hours trawling around shopping centres looking for things you need, time that can now be more productively spent on rest and socialisation and recreation.

Everything one can ever need can literally be on your doorstep, or at least delivered to your doorstep in an Amazon box on the following day without leaving your home.

A VISION FOR THE FUTURE

Remote working is feasible for about a third of the working population and this sector will have a big impact on the changes in society that we will see.

People in this sector are now able to live where they want to live. Many will choose to stay where they are but many will want to move back to be closer to their family, or another favourite place. Many will move to the countryside. This will have a very positive effect on rural communities. The more people that live in a community the more facilities will be required and catered for. Post offices will re-open and the trend for closure of country pubs will be reversed. In addition there will be need for more cafes where locals working from home can stroll to in the morning and more social facilities such as sporting clubs, golf, bowls and the like will develop.

People will be able to live close to specific places where sports or pastimes of interest are already prevalent. Sailors will move to live close to marinas, golfers closer to their favourite golf club and astronomers will move to Otterburn to enjoy the dark sky nights.

A particular benefit of this is the strengthening of these social groups, or “tribes”. The more people there are with a common interest in a local area the more rewarding the interface with others in the community will be. Societies, formalised or not will form, and a telescope shop will open up in Otterburn.

Different parts of the country will become specialists areas, just like the shipbuilding did on the Tyne many years ago. Everyone in Wallsend used to be employed in the shipyards and a strong community developed and many had rewarding, if not hard, lives.

The need not to commute for this sector will continue to reduce carbon emissions which will greatly contribute to the reversal of climate change.

As people move away, housing will become available for those wanting to move. Hospital workers will be able to live closer to the hospitals. Medical type businesses will locate to where the available pool of talent congregate.

The high street as we know it will change substantially. How each high street will change will depend on local conditions. High streets with large remote working populations nearby will cater for pursuits for the time rich customers such as restaurants, cafes, beauty salons, sporting and leisure activities. High streets close to factories will provide take aways, fast food outlets and time saving services for the time poor employees.

A common feature of the high street of the future is that the businesses will be predominantly for products or services that are not available on line. It is likely that the number of retail outlets required will substantially reduce.

So this is the vision for the future.

People will be able to live wherever they want to. Others will do the same which will lead to communities of likeminded people. With this will become community and friendships and fulfilled enjoyable relationships with others.

People will thrive in groups where leaders will act to advance the group to the benefit of the whole.

People will have more disposable income to enjoy life.

CONCLUSION

So here we will have a social utopia where everyone is able to live wherever they want, to do a day's work from home in their pyjamas, have everything they need handed to them at their front door, to enjoy the company of like-minded people close to where they live and enjoying spending more of their money on things they want or need instead of wasting it on commuting. And all this whilst doing your bit for climate change.

Change, most would agree, for the better.

REFERENCES

1 Prime Minister's statement on coronavirus (COVID-19): 12 March 2020

2 Prime Minister's statement on coronavirus (COVID-19): 23 March 2020

3 Rail fares: Commuters 'pay fifth of salary' on season ticket'

4 Petrol, diesel sales fall 30% compared with May 2019

5 Air travel down 60 per cent, as airline industry losses top $370 billion: ICAO

6 Temporary reduction in daily global CO2 emissions during the COVID-19 forced confinement

7 Entain in no rush to repay £63m of UK furlough scheme cash

8 The foreign royals and billionaire tax exiles collecting UK's furlough millions

Jordan, Andrew MQ, 'Otterburn Society Member Essay'

Discuss the merits of choosing 'MILK QUOTAS' as an Otterburn Society presentation subject. Submissions to AMQJ are due by 27th November 2021)

Past presentation bibliography:

1	*2000:*	*CAP and the introduction of Quotas 1984*
2	*2002:*	*The acquisition of Milk Quota*
3	*2009:*	*Milk Quota, an update*
4	2011:	Milk Quota, an update
5	2015:	Milk Quotas 1984-2015
6	2016:	Life after Milk Quotas

Scarborough, Alastair M, 'PROJECT HETTIARATCHI CHALLENGE'

Gentlemen
I am rather hoping that this year's journal will be digital and provide a facility for attachments; well, one attachment.

For some years I have been looking at alternative energy options for Nchima and I have tried making gas in a drum in my garden which worked well while the sun was shining, and JCB built a hydram in KL which appeared to work well until his supplier had to close under lockdown, preventing further development. However, whilst the hydram probably has legs, the gas is possibly best harvested differently. However, I have not really tried solar and asked the DCPA if he could turn his brilliant mind to something more than a remotely controlled cold shower with a hooter and lights.

The issue is this. Charcoal and wood are the only source of heat/energy for a large proportion of Malawians. Electricity is limited in availability and supply and now it is prepaid for, it is in much shorter supply. Africa has the greatest potential of all the continents for hydro electricity but dams are deemed highly controversial even now, but that view may have to change.

In the meantime, the degree of deforestation is alarming. A sack of charcoal costs about £10 and will last a month for a family, maybe longer. Firewood in rural areas will be free or sold. But the problem is that it is not being replaced at the rate it is being used. Furthermore, it is an incredibly inefficient means of cooking. A meal takes 90 minutes to cook largely because it takes time to boil the water. It is also dangerous for children and can cause breathing difficulties for everyone. At £10 a bag for charcoal the economics of solar are hardly worth looking at until the cost to the environment is taken into account.

So my view is that we hurl economics to one side and see what we can do with £20,000 which Nchima will provide. Can we deliver 4 communal type kitchens for that sum of money with a means to cook and store food? Much food is wasted for the lack of refrigeration.

Covid has put paid to any travel to or indeed from Malawi this year and so we shall have to wait but in the meantime, it would be a good use of our now considerable experience to have a go at something like this. DCPA thought it an idea to call it Project Hettiaratchi which I am sure will meet with unanimous support.

DCPA's initial workings are below and attached and we have approached a couple of manufacturers but it would be good to be able to engage our now mature and experienced minds in putting together a tender to obtain really well thought through responses and offers.

To that end I would like to propose the opening of the Project Hettiaratchi Challenge to include the following:

Communal kitchen design:
A shelter(s) to withstand a tropical thunder storm (to be constructed by beneficiaries but require specification)
Water storage and solar heating facility with hydram to fill it if a suitable river or stream is nearby
Cooking facility (microwave or induction stove or both, or other means)
Refrigeration facility.
Batteries need to be very heavy or very secure or both

Some degree for handling obsolescence
Methodology for encouraging ownership
Training plan for swapping out components / maintenance

Budget: £20,000 including al freight, duties and transport in Malawi
The building can be constructed by the beneficiaries

ANALYSIS TO DATE – ALSO SEE ATTACHED SPREADSHEET

		Supplier		
		Greensun Solar	Tanfon Solar	
Component	Parameter			
	Nominal stated rating	20	20	kW
Pannels	Nominal rating of each pannel	460	380	kW
	Quantity of pannels	32	35	
	Rating, Panel rating X quantity	14.72	13.3	kW
Batteries	Gel battery voltage	12	12	V
	Gel battery rating	250	200	Ah
	Quantity of batteries	12	32	
	Nominal storage capacity	36.00	76.8	kW h
Inverters	Rating	5	20	kW
	Quantity	4	1	
	Nominal inverter capacity	20	20	
Price		$9,500	$15,243	USD

Greensun offered 3 systems, rated at 10, 15 and 20 kW, at prices of $5,194, $7,769 and $9,549 respectively. Tanfon offered just one system rated at 20 kW at a price of $15,243.

- **Solar panel converters.** The capacity of the 20 kW Greensun system, calculated by taking the output from the panel multiplied by the number of panels is 14.72 kW, whilst the corresponding capacity of the 20 kW Tanfor system is 13.3 kW, so both figures are comparable. The Solar kitchen calculator spreadsheet (rev 4 attached) suggests that the minimum capacity of the panels to run a FOUR ring stove, fridge, freezer and microwave should have a solar panel collection capacity of 11 kW.

Both packages offer solar panels that have similar nominal capacities and are at least 20 % above that calculated by the spreadsheet.

- **Battery Storage.** Both systems offer gel batteries. These are the deep cycle type meaning that more of the stored charge can be used without damaging the batteries. The Greensun batteries are rated at 240 Ah whilst the Tanfor are rated at 200 Ah. Both are heavy batteries. I have some 120 Ah batteries here and I struggle to carry them more than a few yards, so that might deter thieves. Interestingly though, the total capacity of the battery pack offered by Tanfor is almost double the size offered by Greensun. The calculator suggests 16 of the Greensun batteries would be required, which after increasing by the extra capacity would be 16 * 14.7/11 = 21 whilst the package includes only 12. This strongly suggests that the Tanfor package has about the right number of batteries and the Greensun about half the number shown as required by the spreadsheet.

The Greensun system has less than half of the battery storage capacity offered by the Tanfon system. The capacity of the Tanfon system more closely matches our requirement.

- **Inverters.** Fridges, microwaves etc need a 240v AC supply. Versions of these appliances that can operate at 12 or 24 V are available but they are of the type used in caravans and boats and are only designed for occasional use and are more expensive. Inverters are required to convert the 12V DC to either 230 V AC, 60 Hz for American equipment or 240 V 50 Hz AC for British equipment. The Greensun inverters will do both conversions and I assume that the Tanfor will do too. All of the equipment running or starting simultaneously will draw about 9.6 kW. This is less than the 20 kW offered by both systems by a comfortable margin. It's often a good thing not to run these inverters too hard, particularly in the heat. Both systems have inverters rated at 20 kW however the Greensun package includes four inverters each rated at 5 kW whilst the Tanfon package is a single inverter rated at 20 kW. It appears that the Greensun inverters can be "synchronised" so that they will act as one and load share. Thus, under 10 kW of total load, each should carry 2.5 kW not just two inverters each carrying a maximum of 5kW. Having 4 separate inverters could be an advantage if one were to fail. The system could still operate and the cost of replacing just one smaller inverter would be less.

It is probably better to have the 4 X 5 kW system offered by Greensun compared to the 1 X 20 kW offered by Tanfon for the above reasons of economy.

- **Items not included.** Both packages include fixing frames but these are designed to fit onto roofs. If there are not roofs available than free standing frames will have to be constructed. These could be made locally out of angle iton. The panels need to point north and be set at an angle of 24 degrees to the horizontal for part of the year and horizontal for the rest of the year. No enclosures for the batteries or switchgear are provided

Additional frames will probably be required. A battery house and switch room A ventilated battery house will be required and a spate secure box for the inverters, circuit breakers etc.

- Technical assessment. These is insufficient information in the tender returns to make an assessment of the manufacturing quality assurance systems in place and no data relating to reliability of these systems id provided.

As often the case with Chinese suppliers, we wont really know what we are getting. There is no use them providing something that doesn't work. though presumably they will want to supply many of these packages.

Analysis.

The capacity of the solar panels offered by each tenderer are similar and Greensun provides a slight advantage by offering four separate inverters as opposed to one larger one. The Greensun package however only offers half as many batteries as the Tanfon system and, according to the spreadsheet, the Tanfon system includes the correct number of batteries.

To level these tender returns the quantity of batteries included in the Greensun package needs to be doubled.

The total price of the Greensun package would be :

20 kW system	$9549
Batteries, 12 X 189	$2268
Additional breaker	$ 520
Cable & connectors say	$ 200
Total	**$12,537**

The total price of the Tanfor package would be :

20 kW system	**$15,243**

So these levelled packages are similar, the Tanfon package is effectively 18% cheaper than the Greensun package.

If the Greensun package is selected, this analysis suggests that the additional batteries and associated equipment will be needed.

We could analyse all this in more detail but the assumptions can distort the outcomes. There is a potentially high variance on the parameters used in the spreadsheet. I wouldn't suggest buying 500 systems based on this analysis, but one system to evaluate, monitor and assess in the field would probably make sense.

Recommendation:

1. Get revised price from Greensun for the 20 kW package with 24 of the 250 Ah batteries instead of the 12, plus associated cabling, switchgear etc.
2. Request that Greensun provide contact details for two customers who have bought the 20 kW package who they would be happy for us to approach for an opinion on reliability, performance etc.