

ViveEcosse

National Security

- A plan for an independent Scotland

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Foreword

In preparing this short paper we have drawn heavily on the work that has gone before; from both individuals and governments. Excellent work by authorities in the UK, Norway, Estonia and others has been used in places but also adapted for Scotland's specific needs. Acknowledgement of sources are highlighted within the text as footnotes and a detailed Bibliography provides reference to the origins of many ideas espoused here. This is not the finished article nor is it intended to be; rather it aims to place a different perspective on what National Defence entails in our modern interconnected world. We hope it informs, provides food for thought and a path to open discussion and consultation for those who value our Scottish society and wish to continue to improve it.

Our Vision and Our Relevance

Our Vision

Our vision is for a secure, well governed, and more equal Scotland, which is economically prosperous through the sustainable use of our natural resources by a culturally diverse, tolerant, and well-educated citizenry.

Economic prosperity goes hand-in glove with National Security. In a newly independent Scotland, we would seek to become a respected and trusted partner to our neighbours in Europe and further afield by forging mutually beneficial alliances and associations. We would be a strong voice in safeguarding and developing the relevance of international institutions based on the Rule of Law and Human Rights.

We will seek to help stabilise and develop the current world order by providing our share of the financial, material, and professional knowhow that mitigates risks to those states and their peoples who are facing existential crises; brought on by environmental or man-made change.

Our Relevance

Scotland and its territorial waters, situated on the north western edge of continental Europe has long provided, as part of the United Kingdom, a strategic base for key elements of the North Atlantic Treaty Organisation.

Historically, Scotland has been a critical staging post for transatlantic supply lanes. Its ports, airfields and secure harbours remain key elements for re-supply to continental Europe in the event of conflict on or around the continent.

Our fuel reserves, fisheries, farms and forests make a disproportionate (to our population) contribution to UK's internal and external markets.

Similarly, as the impact of climate change bites ever more fiercely, our abundant wind, water, wave, tidal and (dare it be said) solar resources provide us the opportunity to pivot from fossil fuel use for our energy provision.

Thereby, our fossil fuel resource can be husbanded to manufacture vital chemicals for materials for industry and civil society.

Understanding our Situation in an uncertain World – Our Security

Our **Security** can be defined as the **'state of being free from danger or threat'**. This danger or threat can take many forms. The world is demonstrably becoming more unpredictable with variations from the 'norm' becoming both more extreme and common; be that environmental or political.

This changing security environment is multi-faceted with an increasing blurring of the 'traditional' boundaries between state and non-state actors, fact and fake assertion, and direct and indirect attacks on economic and societal values. The increased Globalisation of economies with a simultaneous breakdown of consensus on the adherence to international norms (as stated in the UN Charter) has made it more difficult, internationally, to facilitate and develop new common agreements and beneficial solutions.

In attempting to understand and mitigate the impact on its Security: **Scotland must reflect on its values and decide on the policies which best protect its citizenry** while recognising that due to its size, population, and location that it necessarily

must achieve its Security through partnerships and co-operation.

Given that the notion of security applies to anything we would wish to make secure from an actual or perceived risk or threat then leaving this solely to traditional defence or intelligence services is unlikely to succeed. Therefore, there must be much greater coordination and cooperation across all sectors in the nascent nation state; including government departments, non-governmental organisations, businesses, and citizens.

Although there are numerous facets of security from food supply, through water and energy to personal data and individual freedoms it is vital that the relevant stakeholders within each threat are identified, consulted, and involved to ensure that each threat/risk is removed or mitigated as far as is possible. Each stakeholder must be aware of their role, responsibility, and obligation in delivering a successful outcome.

In order to focus on developing a coherent national security strategy it is necessary to create a practical framework from which the necessary policies can be developed in a cooperative and

coordinated manner. Using and adapting a simple breakdown, developed previously by Price Waterhouse Cooper consultants, the key interrelated areas are **Physical Security, Digital Security, Economic Security and Social Security** all integrated and assured by an accountable **Governance process** embodied in binding and enforceable national and international Rule of Law and Human Rights legislation.

These are defined as follows: -

Physical security: The physical and institutional security of the state or territory and its administrative apparatus — the classical dimension of national security — and defence.

Digital security: The protection of data and digital networked assets, regardless of whether they are owned by the state, corporations, or private individuals.

Economic security: The safeguarding of financial stability, nationally and within the wider global financial system. For the individual, this means, at a minimum, meeting the basic needs of having enough to live on for themselves and their family.

Social security: Protection of citizen rights and civil liberties as traditionally defined in each state or territory. This is wider than social security as defined by a typical welfare system, including benefits and pensions; it includes food and water security, environmental sustainability, education, and health.

Current and Future Security Threats

The impact of climate change will inevitably lead to large scale population migration and displacement of refugees which in turn will place significant moral, social and economic demands on a newly independent Scotland.

As natural resources become ever scarcer and more unequal to meeting the worldwide demand, Scotland with its extensive maritime footprint needs to be able to control illegal exploitation of its fishing grounds. It must also be able to control entrance to and exit from its borders thus controlling smuggling and other criminal activity.

Recent events in the Baltic, with the unattributed and unattributable destruction of Nord Stream 1 & 2 gas pipelines, have demonstrated just how vulnerable Scotland's North Sea infrastructure is to covert attack with the inevitable incumbent impact on Scotland's economic and social well-being. In this particular case the consequence is so potentially dire that protection is necessary despite the low likelihood of such an event occurring.

Self-evidently there are similar vulnerabilities within vital sub-sea communication cables to continental Europe and North America. Additionally, Elon Musk's brief shutdown of his "Starlink" transmitter/receiver network in Ukraine demonstrate vividly the consequences of non-regulated private or 'other' state actors having control of vital infrastructure assets.

The penetration of nearly every aspect of modern living by digital and networked assets have had, and still has, far reaching impacts on our economic and political institutions. Individuals, terrorists (freedom fighters), idealists, criminal or those acting on behalf of a state can for political and/or financial benefit; gain access to, control or destroy both processes and assets to achieve their goals. State actors, such as China and Russia, employ thousands of computer software experts to conduct data espionage on both government and industrial rivals. Thereby, mining the ability to cause disruption to banking and other vital institutions by planting viruses or by gaining Intellectual Property Rights (IPR) and even state secrets. Cybercrime and propaganda campaigns

can be used to influence events even elections where the use of 'bots' and targeted biases can affect or change outcomes.

The activities of 'influencers' on the world wide web and associated mass-media outlets has in the early 21st century further expanded the 'Security' spectrum. States are scrambling to understand and control the impact of 'influencers' as their ability to magnify messaging and misinformation is phenomenal in both reach and speed. It can significantly affect the Nation State's ability to act on and react to events. Of course, state, and non-state actors can choose to be or use 'influencers' for their own designs. This phenomenon can be reasoned to be a natural extension to hybrid warfare (4th Generation Warfare). Academics and Warfare theorists are labelling this as '5th Generation Warfare'. It is also called the war of perceptions and information. The main purpose of 5th Generation Warfare is the division of society. The distinctive feature of this war is that it is unannounced, unrestricted, and ongoing. It is usually, too, plausibly deniable – this ambiguity around the source of the disruption makes it much

more difficult for the targeted state to take proportionate consequential actions on the suspected perpetrators. International laws and conventions have not kept pace with technological advances adequately thus necessitating states to take more seriously cyber security as a vital tool on a societal, political, and economic level.

Protecting our Citizens and their Prosperity

To protect its citizens and enable their prosperity Scotland needs to safeguard our freedom, our way of life, our values, and our interests. Increasing threats, challenges and vulnerabilities must be mitigated by integrated policies, coherent priorities, and targeted resources.

The complexity of threats and risks and the plethora of potential adversaries (state, non-state and proxy) requires stronger and more flexible civil-military cooperation than hitherto. A new concept of a Total Security Framework (TSF) is necessary to combat both traditional kinetic military effect (using surveillance, materiel, and manpower) and non-kinetic effect (using disinformation to foment unrest, disharmony and division).

Security (and Defence) Policy

To deliver strategic security Scotland must deliver on 4 key subordinate objectives: -

- Protection of the Scottish population, territory, core societal functions and infrastructure against threats, assaults, and attacks from both state and non-state actors.
- Prevention of armed conflict and the emergence of threats against Scottish and allied security.
- Promotion of peace stability and further development of the international legal order.
- Defence of Scotland and our allies against threats, assaults, and attacks in an allied framework.

As an independent nation, Scotland will sensibly lean on Europe for its economic and physical security. We have partners there with whom we share values and interests; particularly so with our Nordic neighbours. The UK's departure from the EU has opened fissures in commerce, education, and other institutions to detrimental effect.

The EU, NATO, the Council of Europe, and OSCE provide the European Security Architecture in which naturally Scotland would wish to participate in, in one form or another. **It is fundamentally important that Scotland contributes to a secure, free, and economically strong Europe.**

A number of the current transnational challenges, such as terrorism and organised crime, fall outside the traditional sphere of Defence and Foreign policy but are fixed firmly in the TSF. Migration and subsequent integration offer similar policy dilemmas that require coordination between countries in new ways and with new measures.

We must prepare for new crises and have the necessary structures, processes, and resources in place to solve them. **Crisis Management** requires identification of the relevant stakeholders, development of professional expertise and regular realistic exercise of scenarios that challenge civil/military cooperation and executive and political decision making on local, national and European levels. Development of a Scottish Crisis Management Capability is a pre-requisite for meaningful engagement with Europe.

Similarly, in combatting terrorism and international organised crime Scotland must develop intelligence led police and customs/border force organisations which dovetail with their European equivalents and transnational organisations such as EUROPOL. Appropriate Protocols and Agreements must be developed to assure the timely and comprehensible transfer of data and intelligence that aid the control of and protection of internal and external borders. A critical enabler for this work is the establishment of an arm of the Civil Service that creates and implements an **Action plan which enables the assimilation of new citizens to Scotland**, and helps prevent marginalisation, through courses, training, and employment.

The underpinning of **Democratic Organisations** internally and externally serves to protect citizens' rights and freedoms and to support civil society. Scotland can serve its own interests by being a proactive advocate in the **fight for freedom of expression, freedom of assembly and freedom of the press** in an increasingly authoritarian world. In conjunction with partners in the relevant

international organisations it will help develop and strengthen the institutions and processes for robust governance, with the necessary authority to protect the Rule of Law and Human Rights. To further those aims internally it would develop an **Office for Democratic Institutions and Human Rights** charged with auditing and assuring the good governance expected of a Democratic nation with rights cemented in a written constitution.

Well-functioning democracies depend on the existence of a strong **Civil Society**. Scotland, as a newly independent state must enshrine in **its written constitution** the checks and balances that maintains **separation between the Executive, the Legislature, and the Judiciary** which in turn underpin the freedom of citizens. It will also need to develop the legal and judicial framework that underpins the **independence of the 4th Estate** (media - mainstream and social) which when working well holds government and organisations to account.

An essential element of a Nation's security is its **Economic strength**. Binding cooperation based on common rules is not only essential for ensuring

positive economic development, but it also helps to reduce the level of conflict between neighbours near and far. **As a part of the UK much of Scotland's wealth has been hitherto accredited to the UK as it is formally traded through London.** The end destination of nearly 80% of that exported wealth is Europe. To that end establishing an agreement with the rest of the UK is vital but even more importantly partnership with other European countries, through already mature trade arrangements such as the EEA Agreement, will enable long term growth and prosperity. Scotland will seek to ensure that any EEA agreement functions well by implementing common rules correctly and on time. Our fisheries, renewable energy sources and fossil fuel reserves will ensure that we have a strong voice at the table to help develop the rules that meet global challenges such as climate change.

Scotland as part of the UK is a member of NATO, the strongest military partnership in the world. The **principle of collective defence**, enshrined in Article 5 of the North Atlantic Treaty, means an attack on one member state is an attack on all

member states. This guarantee (with the US seen as principal guarantor) has prompted countries such as, Finland and Sweden long term exponents of neutrality, to apply for membership in consequence of Russia's Feb 2022 invasion of Ukraine. **As an independent nation Scotland must decide whether its Security continues to be best delivered under the NATO umbrella.** An obvious challenge to status quo is the position Scotland might wish to take on stationing of Nuclear Weapons on Scottish soil or in its territorial waters. There is a clear precedent set within NATO members (such as Norway) that precludes in time of peace the presence of nuclear weapons on their territory or in military vessels or aircraft visiting their ports or airfields. Scotland will need to negotiate with both the rUK and NATO the extent to which UK and/or NATO nuclear and conventional depots and facilities will be sustained and over what period. The basing of another nation's nuclear weapons permanently on Scotland's soil is unsustainable if independence is to have meaning. However, preclusion of NATO membership is not incumbent on a nuclear footprint being retained in

Scotland so mutual self-interest can ensure a viable position which secures a win-win resolution.

NATO is the **only** organisation in Europe that has real collective defence commitments and capabilities. **If Scotland (as an independent nation) is to remain in NATO**, it must help ensure that NATO is able to deal with the security challenges facing its members through credible deterrence and defence. Scotland will play its part by: -

- Enhancing joint situational awareness through exchange of intelligence, regular political dialogue and promoting close links between NATO and National Defence Headquarters.
- Contributing to NATO's Core Tasks – collective defence; crisis management and cooperative security.
- Providing niche military capabilities which flow from Scotland's areas of expertise such as Unmanned Underwater Vehicles developed in the North sea.
- Providing Military and Civil personnel to international operations endorsed by the UN.

- Will support initiatives to strengthen cooperation between NATO and other key actors engaged in crisis management, particularly the EU and the African Union (AU).
- Will contribute to developing NATO's response to new challenges especially in the areas of cyber security and counter human trafficking.

In order to achieve these goals efficiently and effectively **Scotland will with its NGOs, industrial partners, and other stakeholders** develop cooperative plans and policies on force generation, crisis management, defence related development and procurement, and training and exercises.

No democratic state's National Security strategy can be credible without a genuine commitment to **Disarmament and Non-proliferation**. A key tenet of Scotland's defence posture will be combining credible deterrence with a commitment to disarmament and arms control. This combination can enhance our collective security by both procuring the correct defence capabilities and

precluding our ownership of certain categories of weapons.

Since the end of the Cold War, the former Eastern and Western Blocs have made significant cuts in both strategic and conventional forces. Recent crises centred on Ukraine and Taiwan have/are potentially putting those achievements in reverse. Also, territorial and political tensions in the Middle East, on the Asian sub-continent and on the Korean peninsula are creating proliferation drivers which, due to the involvement of and tensions between the major powers, are not being addressed by agreement of effective countermeasures.

A world free of Nuclear Weapons is an aspirational goal which Scotland would work actively towards by **becoming a signatory to the Non-Proliferation Treaty (NPT)** with the view to achieving the balanced, mutual, irreversible and verifiable elimination of nuclear weapons. Realising the vision of a world free of Nuclear Weapons is one of NATO's stated aims while asserting, at the same time, that it will remain a nuclear alliance as long as nuclear weapons exist.

Developing Scotland's Priorities to mitigate the risks to its National Security

Scotland is one of the safest countries in the world to live in. We have a stable and democratic society and a low level of conflict with a maritime temperate climate, ample natural resources, and a low population density. However, an ageing population, energy inefficient housing stock and infrastructure, and government policies which enhance and embed inequality offer significant challenges to a newly independent Scotland.

Furthermore, as the world becomes increasingly interconnected the digitalisation of society is giving rise to new solutions but also to dependencies and vulnerabilities that cut across sectors, areas of responsibilities and national borders. Critical societal functions such as energy supply, electronic communications, and financial services are dependent on long digital value chains that leave us vulnerable. Similarly, the global movement of people and goods more frequently and extensively heightens vulnerabilities to contagious diseases in our people, our food and our materials. By example, COVID 19, Avian flu and Ash dieback

disease all of which are detrimentally affecting Scotland now but none of which originated here.

To combat these and other risks authorities have a special responsibility to nurture and resource a **resilient society**. However, a society's ability to prevent and manage crises requires more than public services and efforts it requires the cooperation of and contributions from the private sector, NGOs, local communities, and individuals too. It is important to maintain and develop emergency preparedness and the ability to endure crises at the local, regional, and national level. Individuals and companies both have a shared responsibility for their security (particularly digital). We all must accept responsibility for how our own activities (or indeed inactivity) can affect the security of others.

Total Security Framework

Scotland's **Total Security Framework (TSF)** will be based on four fundamental principles: responsibility, similarity, proximity, and cooperation.

- *Principle of responsibility:* that the organisation responsible for an area on a day-to-day basis is also responsible for the necessary emergency preparedness preparations and for managing extraordinary incidents in that area.
- *Principle of similarity:* that the organisation one operates with during a crisis should be as similar as possible to the day-to-day organisation.
- *Principle of proximity:* that crises should be handled organisationally at the lowest possible level.
- *The principle of cooperation:* that authorities, enterprises or agencies have an independent responsibility to ensure the best possible cooperation with relevant parties and enterprises on work related to prevention, emergency preparedness and crisis management.

Systematic work is important to achieving a high level of resilience. Our skill level in one aspect of the work affects other aspects. Our work on resilience is therefore structured like a chain. This chain consists of: (1) knowledge development, (2) prevention, (3) emergency preparedness, (4) recovery after incidents, and (5) learning from incidents and exercises.

When managing and resourcing Scotland's **TSE**, authorities must ensure that the response is proportionate to the risk and that civil liberties are protected robustly. For example, while we want to prevent serious crime, we do not want a society based on wide-scale surveillance of private or public spaces. We must always identify such dilemmas, as they exist, and confront them to determine how they should be addressed. However, a 100% secure society is neither realistic nor desirable. We must manage uncertainty by consulting widely, prioritising as agreed to husband resources most effectively.

As a society, we must be prepared to manage contingencies, including large scale crises (even war), that pose a major challenge to our

emergency preparedness. Fundamentally, this requires local authorities, police forces, fire and rescue services and the medical service responders to be resourced and trained and practiced in crisis management with the necessary emergency procedures and delegated command authorised. They must have operational command centres that are fitted with a communication suite, data library and operational orders which ensures interoperability and real time connectivity of all essential stakeholders. In addition, the available assets and expertise of private, NGO and military organisations, e.g helicopters or excavating equipment must be identified for each contingency and their readiness understood and exercised. Nationally, an effective and mobile communication system (like Norway's Nodnett) should be developed for emergency response.

Digital Vulnerabilities and Information & Communications Technology (ICT) security

Enterprises and private individuals must be able to trust systems and networks to work as intended and protect the privacy of individuals and the Intellectual Property Rights (IPR) of companies.

Comprehensive ICT security is a prerequisite for gaining that trust. Therefore, Scotland must develop a national capability to detect and manage cyber attacks however and wherever they are presented. Global companies must be held accountable to the same standards as national companies and be licensed and audited to ensure that they comply with and adhere to those standards. An arm of Scottish Intelligence Services would be manned and resourced to provide the assurance required, with the cooperation of key stakeholders, to anticipate, monitor and control advances in this fast developing and expanding sector critical to Scotland's current and future prosperity.

Scotland's authorities within the **TSF** will develop an ICT infrastructure which provides a secure and resilient electronic communications network with inbuilt redundancy and hardened access portals. The availability and encryption of data networks (particularly satellite sourced) will be reviewed, and critical vulnerabilities identified. The Government, in partnership with trusted providers and allies, will act as guarantor of capacity, availability and

security. A National Communications Authority (NCA) will be created to oversee the delivery of the ICT requirement identified and assure its ongoing delivery. Critical to its success will be the provision of the educational capacity and research commitment to supply the professional expertise needed to underpin Scotland's ability to thrive in this critical sector. The NCA will seek allies and partners internationally to help create global guidelines and specific measures to reduce and combat threats in cyberspace.

Natural Hazards

Every year natural hazards such as wildfires, floods, landslides, and storms destroy valuable assets.

Recovery action expends more and more time and scarce resource. Climate change is both increasing the magnitude and frequency of these events. The flora and fauna of Scotland are threatened and changing at a pace last witnessed in the Ice Age.

Our whole way of life is under threat with the projected impact becoming more rapid and severe as the modelling of climatologists improves with more comprehensive data and better understanding of the interaction of the multitude of possible variables. Scotland's maritime temperate climate depends on 2 critical phenomena, the Gulfstream (Water) and Jetstream (Air), both of which assure a more moderate climate than might be expected at our northerly latitude. As risks to our climate grow those to our National prosperity (and Security) do so too. Authorities have a key role to play – prior planning and preventive measures while not solving the problem can mitigate the impact. Planning permissions and building standards can

greatly reduce the risk as can sea walls and flood alleviation measures in specific locales. However, global change needs international governmental action to resolve effectively.

A newly independent Scotland would be a signatory to the outcomes of COP 27 and seek to accelerate the necessary change to global policies to reach the zero carbon targets and timescales required to mitigate climate change. All government departments would be tasked to deliver which would modernise our economy to significantly reduce pollution, carbon footprint and other environmental impacts. The Scottish Environmental Protection Agency (SEPA) would be manned and empowered to enforce the relevant legislation and regulations. A robust Research & Development programme would utilise the expertise in the university and industrial base. It would be overseen and augmented by a National Defence and Economy Research Agency (NDERA) which would attempt to design and develop new technology that could affect global change be it through moisture retention in the soil in the Sahara or snow seeding in the Cairngorms. 1 in 100 ideas

may come to fruition but 'Blue Skies' solutions are needed to safeguard Scotland's future. In effect **climate change knows no boundaries.**

Serious Crime

Criminal activity and Crime gangs are morphing all the time. In general, crime is becoming more technologically advanced, organised, and Global. State and non-State actors are routinely involved. Threats include terrorism, human trafficking, drug running, financial scams, money laundering, industrial espionage, and cyber-crime.

Although, some of these crimes can be conducted remotely; in the main, individuals or groups of individuals need access to national territories or national networks. Identification of the potential perpetrators of crime is therefore key. Finland has facilitated the coordination of information by issuing electronic Identification (eID) to all its citizens and long-term residents. Careful layers of authentication and access to the individual's data held have removed initial privacy concerns while greatly enhancing the necessary authority's ability to 'see' the whole picture. For instance, a car accident victim's eID can immediately provide blood type, vaccination status and underlying medical conditions to a paramedic on the scene. An independent Scotland should evaluate eID as a

means to aid the protection and safety of its citizens.

Crime flourishes where there is endemic poverty, those that have little; have little or nothing to lose. Thus, it can be a symptom as well as a cause. The US have long had a **policy of 'seeding' employment in deprived zones** using the siting of government offices and agencies as catalysts for construction, supporting services and facilities, and infrastructure (such as schools and libraries). A newly independent Scotland has the opportunity to provide an alternative for crime infiltrated poor communities.

The combatting of cyber crime and its subsets such as industrial espionage, financial scams and personal data mining requires a sophisticated response from professionals who have a deep understanding of code-writing and network tracking. Scotland will require a Cyber Coordination Group which can share information, intelligence and expertise across the responsible organisations of the Intelligence Services, Police and Custom services as well as the security and computer service departments of OGDs, private

companies and NGOs. Commercial providers of electronic communication services will be subject to regulatory and security controls.

Scotland's maritime borders are vast with a coastline comprising many inlets and harbours. Policing it will require **a separate Coastguard tasked with fishery protection and anti-smuggling duties**. It will need to develop a close liaison with the Police force, Intelligence Services, Border Customs and Defence forces. It could feasibly undertake a Search & Rescue support role if that was an efficient and cost-effective use of assets.

Infectious diseases and hazardous substances: preparedness

COVID 19 exposed how ill prepared government and its crisis management procedures were for the arrival of a severe pandemic on these shores.

Although, the risk of a pandemic had been identified and initially addressed; over the years budget cuts meant that perishable resources had not been upgraded or replaced. Risk had been taken without considering the consequences.

CBRNE policy had fallen into disrepute and disrepair. **C**hemical substances, **B**iological agents, **R**adioactive materials, **N**uclear materials, and **E**xplosives are all hazardous materials requiring a precautionary and expert response; that is a **Crisis Management level** response. Necessary resources must be pre-ordered, stockpiled and replenished to keep in date the first response capability.

Civil-military cooperation within the Total Defence Framework

The security situation in Europe is more demanding than it has been for a long time. For the Armed Forces to perform their tasks, cooperation is needed between public authorities and private actors within the framework of total defence. Civil crisis management and civil protection, for their part, will benefit from assistance from the Armed Forces. Mutual civil-military cooperation has gained urgency and must be a key tenet of National Security.

To help meet both known and unforeseen needs, the relevant cooperative and emergency preparedness bodies will be created to be able to meet challenges associated with security crises and armed conflict. Civil society's support for the Armed Forces will become more integral to training activities and will be included in both civil and military training programmes and in national emergency preparedness plans.

The need for the identification of critical nodes and facilities for the secure provision of essential services to civilians has been brought to stark focus

in the Russo-Ukraine conflict. Government Contingency must prepare and plan for protecting and increasing the resilience of these vital services and where necessary resources must be provided to enhance survivability to the requisite levels. NATO has identified the seven baseline requirements on resilience of **essential societal functions** as follows: -

- assured continuity of government and critical government services
- resilient energy supplies
- ability to deal effectively with uncontrolled movements of people
- resilient food and water supplies
- ability to deal with mass casualties
- resilient communication systems
- resilient transport systems

Necessarily when considering the **TSF** the international framework within which Scotland will create, nurture and promote its relations matters. A simple initial hierarchy of membership of the United Nations, the European Economic Area (EEA), the North Atlantic Treaty Organisation

(NATO) and perhaps less obviously NORDIC under the Hague II Declaration for Civil Protection would provide that framing sensibly for a nation new to the international scene.

Military and Defence Industry Contribution

As previously expressed at least initially remaining in/joining NATO would shield Scotland under the strongest military collective defence umbrella in the World. It is also fortunate, but perhaps not coincidental, that many of our probable key trading partners on which our future economic prosperity will depend are embedded in NATO.

As a nation with a relatively small population and limited financial clout (initially at least) Scotland must dare to be different. Warfare in both scope and means is transforming rapidly; automation on the battlefield gathers pace and weapon lethality makes survival in the ever widening battle space extremely challenging. Logistics and training remain key enablers and force multipliers. Situational awareness and shaping the battlefield are critical elements of success with all modern warfare becoming extremely dependent on microchip technology and satellite communications. So how may a new nation protect itself while contributing meaningfully to collective defence?

As its unique contribution Scotland must develop niche capabilities geared by our expertise in academia and industry. In finding solutions some (and preferably all) of the following principles and utilities should be assessed and evaluated against weighting criteria: -

- Dual purpose assets (civil and military)
- Resilience provided by numbers and/or robustness
- Autonomous and remotely operated
- Adaptable (modularity)
- Mobile
- Upgradeable
- Low maintenance
- Replicable
- Shelf life
- Tolerance to Climatic conditions

Layered Defence will be an underpinning principle that protects vital infrastructure and High Value Units (HVU). As a nation within the UK we host large elements of the UK (and NATO's) military training estate, maritime and aviation bases, and logistics (particularly fuel and munitions) and early

warning sites. In addition, all of the top 5 UK Defence sector manufacturing and service providers have significant assets and employees currently residing in Scotland. Our highly skilled workforce maintains quality output aided by innovative research and development expertise.

Our civil industrial and academic strengths also lend themselves to harnessing their expertise in niche technological and research areas. These include, to name but a few potentially productive sectors such as: gaming technology, vaccine development, multi purpose Underwater Vehicles, satellite communications, energy distribution technology, and kinetic energy effect research. Areas where the dual purpose civil and military use may be exploited rapidly are:

The Ferry Fleet for the Islands – a fast fleet of ferries capable of transporting and landing military vehicles, men and their modular supplies in most weather conditions fitted for but not with self-defence systems.

North Sea Support Vessels – capable of launching and recovering drones and remotely operated underwater vessels (ROVs) which in peacetime and conflict provide surveillance, monitoring and interdiction capability.

Meteorological and Surveillance Drones – drones with long range and endurance fitted with sensors to capture meteorological and oceanographic data and monitor vessel movement.

Satellite Communications – small High capacity geo stationary satellites with encryption and anti-interference technology that are recoverable and relaunchable.

Mobile Threat Detection and Defence Systems – obsolete north sea rigs provide ideal platforms for early detection and protection of 'live' rigs and the Scottish mainland -development of an autonomous interlinked «Dome» defence system which can be moved between platforms will be a priority.

Smart Medicines – that use and manipulate the genetic footprint of viruses and bacteria to provide immunity.

Scotland's Defence Forces although relatively small have the opportunity to be highly interoperable and integrated in the Community from the outset. There are some fixed bases that, although needing adaptation, are strategically located, vital to the local economy and extraordinarily expensive to move. Lossiemouth (Airforce) and Helensburgh (Navy) are the critical examples.

Force Mix

There are as many possible force mixes as pundits to propose them. This paper espouses that our National Security Framework will not be a mini-UK replica. This is for 2 main reasons in that, firstly, Western Forces have a preponderance of high impact, high value units already and, secondly, the nature of warfare in a digitised interconnected world is changing rapidly and the very nature of future defence assets will change. Threat analysis and technological development will make variations to force structure essential and the more adaptable, interconnected, and interoperable the structure is the more rapidly new threats can be responded to.

Assumptions made are that as a maritime nation with an extensive 200 mile zone its main effort will be protecting its interests in that zone. Its Army will largely be expeditionary in support of operations requested by our membership of the UN and our Allies. Its Airforce and Special Forces will provide early warning and support to maritime and land forces operations. Equipment should be designed

to have a design life of at most a decade whether it is supported on a slightly longer life base platform or not. Modularity will be key.

ARMY – A Land Operations Centre with a deployable element which would function within a forward Joint Operations Centre. A force construct which includes an Intelligence Battalion, Regionally based and recruited manoeuvre and support battalions. High readiness maritime and air capable expeditionary battalions with their necessary supporting arms.

NAVY – A Naval Operations Centre with a deployable element which would function within a forward Joint Operations Centre. A force construct which would include Command capable units, small highly manoeuvrable, stealthy and modular units (flexible tasking), underwater vehicles capable of conducting surveillance, salvage and demolition tasks, amphibious vessels and the necessary support and logistic vessels and bases.

AIR FORCE – An Airforce Operations Centre with a deployable element which would function within a

Forward Joint Operations Centre. An interconnected multi unit Airborne early warning system with in flight fuelling support elements, integrated air based air defence and force protection system, ground based air defence and force protection, forward operating bases infrastructure and force elements. A helicopter force consisting of ground attack and heavy lift maritime and land capable units.

SPECIAL OPERATIONS FORCES – A Special Operations Centre with a deployable element which would function within a Forward Joint Operations Centre. A force with Land air and sea capability and specialised support resources and equipment capable of covert insertion and recovery.

HOME GUARD – A Home Guard Operations Centre integrated with the Civil National Emergency Response Centre. With regional centres (also colocated with regional crisis emergency centres) designed to operate within distinct territorial districts and each having Rapid Response elements.

COASTGUARD – A stand alone Coastguard Operations Centre with sufficient seagoing vessels to patrol proactively and continuously our 200 mile maritime economic zone and our inshore waters with the forward support jetties and facilities to maintain a robust operating tempo.

JOINT FORCES/ASSETS – A joint headquarters with a deployable capability, intelligence service, cyber defence service, Armed forces logistics and engineering support arm (including Host Nation Support), joint CBRNE Protection Service, joint medical services and joint military police with appropriate designated facilities.

Conclusion

Protecting Scotland's sovereignty, territorial integrity and freedom of action comes at a cost. Robust and comprehensive force development takes time. Negotiated legacy equipment and assets from UK will work but may not be optimum to meet the threats of a fast developing world. Addressing state and non-state threats takes intellectual effort, planning, resolution and resources – all of which Scotland is capable of delivering as a trusted ally and partner. It is time to start the journey.

National Security

- A plan for an independent Scotland

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