

Joint Air & Space Power Conference

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Preparing NATO for Joint Air Operations in a
Degraded Environment

CONFERENCE
PROCEEDINGS



Joint Air Power
Competence Centre

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The JAPCC wishes to thank all sponsors for their contribution to this year's Conference and for helping to make it a great success.

A handwritten signature in blue ink, appearing to read "Joachim Wundrak".

Joachim Wundrak

Lieutenant General, DEU AF
Executive Director, JAPCC

Preparing NATO for Joint Air Operations in a Degraded Environment



General Wolters, the JAPCC Director, opened this year's Annual Air and Space Power Conference.

Introduction

The 2016 Joint Air Power Competence Centre (JAPCC) Conference was held between 4th and 6th October in Essen, Germany. It considered whether NATO's employment of airpower over the past two decades in operations where environmental conditions have been neither contested nor congested had resulted in a reduced level of preparedness – both doctrinally and in terms of training – for alliance air power to be utilised optimally in a degraded environment. This is a broad topic and is one that has perhaps not had the visibility it deserves in recent years. Recent operations in Iraq and Afghanistan have been conducted in environments where our adversaries, though lethal and innovative in some areas, lacked the technical sophistication to deny us the full spectrum access we need in order to successfully bring air power to bear. Put simply, modern air power is a high tech business and it is reliant upon the ability to gain unrestricted and assured access to the entire electromagnetic spectrum, space, and, increasingly, cyberspace. Environmental degradations, be they imposed by an adversary or created by natural phenomena, have a massively debilitating effect on the ability to successfully employ air power across all its roles.

In simple terms, the conference was seeking to consider whether this is an area in which NATO has potentially taken its eye off the ball. JAPCC's intention was to open a conversation among NATO's strategic joint air power leaders from all services, providing them with fresh ideas on actions required in this area.

These Proceedings consolidate the key note addresses, the panel discussions and attendee contributions to form a summary reference of the event and to offer points for future consideration and development. The document does not record the minutes of the Conference; rather, it highlights the major themes and draws together thoughts and ideas from all elements of the Conference. For a fuller understanding of the topic, readers are encouraged to read these Proceedings in conjunction with the previously published Conference Read Ahead material, comprised of the

Conference Read Ahead, which laid out relevant background information on the broad conference themes, and the JAPCC Journal Special Conference Edition, which pulled together JAPCC Journal articles from the past which addressed this topic in some fashion. The Conference itself boasted a wide range of participants, including senior military leaders, NATO policy officials, non-governmental organisations, defence industry officials and staff from 25 different nations, all of whom contributed to the discussion on this complex and challenging area.

In the spirit of Chatham House Rules, no statements, opinions or ideas are attributed to any particular individual within this record. That being said, the JAPCC gratefully acknowledges the thoughts and effort put forth by all participants in this Conference, Keynote Speakers, Panellists, and audience participants alike.





The Enduring Requirement for Air Power in the Contemporary Strategic Environment

The conference opened with some scene-setting observations regarding the key enduring roles of air power. It was argued that these comprised: control of the air (the achievement of air superiority over the battle space in order to secure freedom of manoeuvre and eliminate the risks of attack from above); intelligence, surveillance and reconnaissance (ISR) – utilising air assets, both manned and unmanned, as the ‘eyes and ears’ in the sky in order to achieve full spectral situational awareness of the battlespace; air mobility (from short range to intercontinental); and delivering precision kinetic effect. The challenge for NATO, it was stated, is to ensure it has established air power doctrine, equipment, procedures and training which allow these roles to be delivered, even in a degraded environment.

In the early decades of NATO’s existence, events were dominated by the Cold War and allies were used to the notion of preparing for ‘force on force’ conflict. Subsequently, for a period of time following the Cold War, counterinsurgency

operations increasingly became the norm and NATO had to contend with a world of 'grey zone conflict' in which ambiguity and uncertainty were dominant factors. However, in recent years, the security environment in Europe has changed dramatically and the possibility of NATO having to face a peer state competitor in future crises and conflicts seems to have returned.

No longer having an early advantage over our opponents, such as air superiority, immediately places us in a Degraded Environment and challenges planning assumptions we have used for the last 25 years (since the end of the Cold War). The criticality of fighting as a joint team has been underscored and it is, for many, impossible to envisage future operations ever being anything other than joint in nature. Whilst air power brings unique strengths and capabilities to the joint fight, including speed and reach, it cannot and will not ever be the complete answer. Every operation is different and airmen must accept that, on many occasions, they will operate in a supporting role. Preparedness to fight is crucial: credible and proven preparedness sends a very strong message to NATO's potential adversaries and thus plays a vital role in deterrence.

Air power faces significant challenges if it is to continue to be successfully employed in a degraded environment and thus allow NATO to maintain one of its key areas of asymmetric advantage. Historically, militaries have had to react and adapt to degraded environments and today's challenges are arguably nothing new. Air power is utterly reliant on access to the electromagnetic spectrum, space and cyber systems. Surveillance, especially air surveillance, communications and intelligence are heavily dependent on the use of, and access to, the electromagnetic spectrum. Without access, our situational awareness is severely downgraded, as is the Common Operational Picture. One paradox for air power is that its ability to continue to deliver desired operational effects in a degraded environment is reliant in part on sophisticated ISR systems to provide situational awareness about the nature of the degradation. However, these advanced ISR systems are the very systems which degradation can adversely affect rapidly and dramatically.

Civil and military dependence on space has grown exponentially. Communications in remote regions are enabled through space-based assets and we all benefit from satellite-based navigation. When you have only eight to ten minutes to react to a ballistic missile launch, time critical target information provided by satellites is more than just necessary. How will we operate when these capabilities are degraded or no longer available? In a degraded environment, the 'fog of war' can serve to fracture or confuse routine channels of communications at all levels. In this context, the first question that must be considered is this: Does a Degraded Environment require our politicians to change their level and span of control over military forces, shifting their focus away from tactical problems and onto providing guidance and key decisions?

In doing so, the political leadership would provide military commanders with the freedom to act in a Degraded Environment within the guidance provided – mission command in its pure sense.

Although relatively new, cyber capabilities have become hugely important for the whole of western civilisation. We are heavily dependent on computer programs and networks. Supply chains will not work without information technology and modern weapon systems cannot operate without computers and the information they exchange. Additionally, most modern military technology is dependent on a GPS signal, including our precision guided munitions – PGMs. What should we do if these received incorrect target information and destroyed sensitive civilian installations, like a hospital, instead of a legitimate military targets?

All three areas – the electromagnetic spectrum, space and cyber – affect land, maritime and air domains, and therefore all services. Gaining and maintaining air supremacy, or at least air superiority, is a prerequisite for providing support to land and naval forces in a Joint Operations Area. However, this flexibility may be significantly challenged in a Degraded Environment, causing us to lose the freedom of manoeuvre that we have all taken for granted for the last 25 years. This also challenges our traditional assumptions on how we manage and use military power, especially Air Power.

Panel 1: Defining a Degraded Environment

An internal discussion within the JAPCC since the conference has come to the conclusion that perhaps this panel was misnamed. The use of the word 'defining' in the title gives the impression that, in fact, the goal of this panel was to achieve a clear black-and-white definition of what the degraded environment is. In fact, the guidance that was given to the panel members was 'to briefly discuss what degradation in their area looks like and to explore further, under the leadership of the moderator, how those degradations could interact to further hamper air operations.' In retrospect, a better title for this panel might have been 'Exploring' or 'Unpacking' the Degraded Environment. This would not have led anyone to the assumption that the goal was to concretely define the degraded environment. Rather, it was to provide a scene-setter upon which the rest of the conference could build, providing conferees a somewhat common understanding of the characteristics of various degraded environments.



The session began with some fascinating academic insights. There was broad consensus that all environments are degraded to a certain extent, whether by natural, intrinsic sources of degradation such as weather or natural disasters or by manmade effects. The key to understanding the operating environment is preparedness in terms of monitoring and forecasting alongside a well-developed training and education system – at all levels. NATO's nuclear, biological and chemical (NBC) doctrine and training during the Cold War was cited as a good example of preparedness to operate in a degraded environment. Furthermore, such was the level of training, commitment and resolve shown by NATO forces in this regard across

all domains, the net effect was to send a very strong message of deterrence to potential adversaries:

'We are fully prepared and ready. Are you really sure you want to do this ...?'

It was highlighted that 'degradation' can have a wider meaning than simply direct degradation of systems within the battlespace. Enemy cyber-attacks on civilian structures and systems such as power generation or banking could have rapid and devastating effects which would quickly impact civilian morale – which could, in itself, be our centre of gravity. Equally, attacks aimed, for instance, at degrading allied logistic supply chain operations could have massive impact on both military capability and civilian morale.

Today's challenges are different, numerous, complicated, instantaneous and deeply unpredictable. The Cold War was replaced by a period of certainty of counterinsurgency, low-level operations vice large, force-on-force conflict; however this reality has once again shifted more towards a Cold War-type environment. Globalisation means that money, data and information move near-instantaneously. New technologies proliferate across the globe. Non-state actors operate in real and virtual lanes that are hard to predict. This may result in NATO being restricted from operating with the full freedom to which it has become accustomed. NATO's front line war fighters are a post 9/11 generation; they are battle hardened but only in a very narrow field. With increasing technological reliance comes increased vulnerability. In response, NATO must harness technology and understand the complexity that surrounds modern fighting systems whilst at the same time remaining agile and adaptable such that it can continue to fight and win in any degraded environment (such as when technological systems have reduced functionality).

'The Tornado GR1 software dependency was 4%. In the F35 it is 94%.'

The age of precision bombing has been made possible by the integration of space-based guidance systems. However, what if such systems are denied us in a future operation by an adversary?

You do not have to have a space programme to have a counter-space capability.

Do today's NATO forces agree with the 'train as you fight, fight as you trained' mantra or do major exercises shy away from replicating genuine degradation for fear of failure? There was widespread consensus during discussion that there were shortfalls in training in a variety of areas; greater use of synthetics should be made in order to prepare more fully for operations in degraded environments and there should be a greater preparedness across all domains and at all levels to use reversionary tactics more frequently (e.g. a day without space).



'A capability not trained and exercised is not a capability.'

Furthermore, arguably there is a need for additional training to enhance mutual understanding between senior military leaders and senior politicians. This theme was developed further in Panel 2.

It was reported that, in recent years, the United States Air Force has developed a 3-part definition to help distinguish different aspects of 'degradation'. The first category is **Contested** operations – the things the enemy does to an opponent directly to hamper his mission (e.g. direct physical attack, electronic warfare, cyber attack etc). The second category is **Degraded** system operations – things that happen in the natural course of events (e.g. system failures, battle damage, etc.). The third category is **Operational** limitations caused by the physical or operational environment (eg weather, natural hazards etc). During discussion there was widespread agreement that this 'CDO' model provided a helpful intellectual framework upon which to hang discussion of degraded operations. As such, there may be merit in adopting such a categorisation on a broader NATO, pan-domain front.

The ability of our potential adversaries to degrade our operating environments, whilst continuing to secure their own mission success was debated at length. Russia's involvement in hybrid warfare, information warfare (which chimes perfectly with last year's JAPCC conference on Strategic Communications) and their pursuance of anti-access area denial (A2AD) strategies is of strategic concern. Equally concerning is China's heavy activity in the cyber field and the increasing risk that commercial off-the shelf military solutions may have 'suspect chips' embedded within them. The US has faced some difficult internal tensions over the issue of lead responsibility for cyber and space and where exactly lead government responsibility for such areas should sit. It was clear that other nations share similar problems.

There was broad agreement between conference attendees that clarity of lead responsibilities and boundaries was essential, as was the need to accept the primacy of 'thinking joint' in any future operation. The military must get used to the fact that they might not always be the supported agency; sometimes the military might operate in a supporting role. Discussion concluded with mention of the criticality of the relationship between politicians and military leaders and how that relationship must be

built on trust. This discussion led seamlessly into Panel 2!

Panel 2: Political and Strategic Level Considerations

Much of the discussion focussed on the relationships between the public, their democratically elected politicians, and the military. It was highlighted that politicians carry the burden of responsibility for the decision making that ultimately



can result in war and that they are increasingly having to take account of a Western public which has become sceptical, conflict averse, and casualty averse as a result of recent operations in Iraq, Afghanistan and Libya. The point was made that, in a degraded environment, operational risks are likely to be higher; this may reduce politicians' willingness to commit forces for certain missions if they fear a backlash from their own publics. The key to future success in such situations will be preparedness: preparedness of agile and adaptable personnel and equipment, trained (both live and synthetically) to fight and win, even in a degraded environment; preparedness of senior military leaders and politicians to trust each other to the point that genuine mission command is exercised. Thus, in the fog of war, when communications channels are likely to be disrupted or denied, the 'long screwdriver' must not be brought to bear! In seeking to establish the required degree of trust and mutual understanding, further opportunities to educate (such as politicians attending military staff colleges as happens in some nations) must be sought as a matter of priority.

It was argued that many, if not most, politicians lack a fundamental understanding of the basic theory and concept of deterrence and coercion. It is critical that NATO's forces are trained to fight successfully in the most demanding degraded environmental conditions that might reasonably be anticipated. Not only must they be prepared, but they must be seen to be prepared. This is crucial. As mentioned earlier, NATO's commitment to and preparedness to fight in NBC conditions during the Cold War sent a very strong message of deterrence to the Soviet Union.

Much of the discussion resonated well with arguments that had been fielded during the 2015 JAPCC Conference, which was focussed on Strategic Communications. Arguably, our potential adversaries are better at conveying a strong and consistent strategic communications message than is the Alliance.

The growth of sophisticated communications systems now means that politicians have real time visibility of – and the potential therefore to

'meddle' with – events in the battlespace. The elimination of Osama Bin Laden, which President Obama and his entire war cabinet watched in real-time, provides a good example of this phenomenon. Whilst the rights and wrongs of such visibility can be debated, the fact remains that politicians have come to expect this level of visibility and involvement. In any future conflict against a serious opponent, the level of environmental degradation is likely to be far more severe than NATO has become used to over the past two decades and politicians might, once again, have to relearn the basics of mission command: 'tell the military what you want it to achieve and then step back and let them get on with it!'

The growing and enduring importance of adopting a comprehensive, whole of government approach to security challenges was reinforced. Politicians must ensure that all possible instruments of power (diplomatic, informational, military, economic) must be brought to bear in a coordinated manner in future crisis management and the military must get used to the idea that they will not always be operating in a supported role.

The notion was discussed that it is not only the military who, even today, have to operate in a degraded environment. In the complex and demanding world of politics, senior leaders make difficult decisions against a backdrop of a sometimes critical media, fickle public opinion and in an environment where half-truths and misinformation are commonplace. In such circumstances, senior military leaders who seek political approval for a potentially risky course of action (perhaps regarding tactics or targeting) place politicians in a difficult position, especially as we are now in an era of younger Western political leaders, the great majority of whom have no direct military experience and most of whom have never engaged in serious discourse about the essence of deterrence.

It was argued that recent ISIS attacks on Western cities have at least served to heighten public awareness about defence and security issues and that the challenge for political and senior military leadership within the Alliance is to improve our strategic communications messaging. Clear,

consistent messaging would send important signals of reassurance to our publics whilst concurrently sending strong signal of preparedness and intent to any would-be adversary.

Panel 3: Civil-Military Cooperation

The impact of degraded air operations on civil-military cooperation was included in the agenda to give Non-Governmental Organizations (NGOs) and aid agencies the opportunity to explain the issues as viewed from their perspective and to allow all parties, including air power planners and practitioners, an opportunity to propose practical and procedural improvements when operating in the same battlespace.



A senior representative from one highly respected aid agency gave a very powerful overview of their organization's aims and objectives. Operating hospitals and medical facilities at the heart of conflict zones, their organization is completely independent: it does not take sides in war zones and it does not rely on funding from any government. The extraordinarily noble and charitable work they undertake takes place at the very heart of conflict zones and this inevitably brings them into the same geographic area in which military forces operate. Whilst charity officials liaise with both belligerents and military headquarters, sadly, sometimes mistakes are made. A short video explaining the events of October 2015 when coalition forces accidentally bombed a field hospital in Kunduz, Afghanistan provided a very graphic and sobering summary of what can happen when things go wrong.

The plea from the aid agency was a simple one: all parties must have complete respect for, and abide by, the rules of war. Additionally, if a field hospital changes status from protected to legally targetable for some reason, they simply need to be told so they can evacuate.

Inevitably, much lively discussion followed! Many members of the audience had operational experience from Afghanistan, either as front line aircrew or as senior military planners in headquarters. It was highlighted that NATO goes to extreme lengths to avoid any civilian casualties and that, given the scale of NATO offensive air effort in the country over many years, the proportion of attacks where mistakes have occurred is tiny. Nevertheless, there was widespread agreement that, whatever practices and procedures are in place, they are not watertight and all parties must strive to seek further improvements to mitigate the risk of such incidents happening in the future. During this section of the conference, the JAPCC offered to set up a formal liaison with the aid agency in question to learn lessons from the past and to make recommendation for how such accidents might be avoided in future, particularly in the demanding circumstances of a degraded environment. This offer was warmly accepted by the aid agency representative.

The topic of civilian casualties was a major debating point throughout the conference, with many attendees highlighting the increasing risk aversion seen in today's political leaders. The high turnover of senior military leaders in Afghanistan was cited as a problem by some observers, who noted that the frequent roulement led to situation where, for instance, a brigade commander has only a finite time on the ground for his team to 'make their mark'. This could drive behaviours which might result in the occasional use of disproportionate levels of force. Similarly, limited in-country tour lengths reduced the opportunity for relationship building – and thus the generation of trust – with other non-military in country actors such as NGOs.

It was highlighted that, for all its technological advances over the years and the complexity and sophistication of military systems in all domains,

war remains, at its heart, an essentially human activity. Human beings still make the critical decisions and they have to do so without complete knowledge even with non-degraded capabilities. Even in the era of information dominance, NATO faces a law of diminishing returns: the challenges of data deluge will only become greater in the future. The importance of relationship building at all levels is paramount. A Joint approach is the only way ahead: inter-service point scoring and rivalry is unhelpful, wasted effort. The military must work harder to explain, in simple terms, what it can – and cannot – achieve in the prevailing circumstances to a wide audience. This audience must include NATO's publics, politicians, other government departments (those beyond defence) as well as NGOs and aid agencies.



In considering civil emergency planning, it was noted that there are seven key areas where NATO needs to focus investment and build resilience. These are: continuity of government post-crisis (the need to establish a competent national authority); the management of mass casualty movement; controlling mass movement of populations; ensuring the provision of food and water; protecting and ensuring energy supplies; ensuring communications links; and allowing continuance of freedom of movement via transportation links. There will remain a supporting role for the military in many of these areas and, again, the key to success will be preparedness; education, training and exercising are the only ways to ensure that all parties know their roles and can still carry them out even when the operational environment becomes degraded.

In a degraded environment, if politicians cannot contact us they will have to trust us!

As one speaker highlighted, war is a dirty, ugly and brutal activity that should only be undertaken as an act of last resort. The military profession is, however, a noble and honourable profession. Retention of that sense of honour must be at the heart of NATO's 21st century warfighters and a recognition of that honour, and of the intent to act for the good of the Alliance, must be at the forefront of the politicians' trust in those war fighters. This highlights once again the necessity of training realistically and emphasizing mission command in so doing.

Panel 4: How Does Degraded Air Capability Impact Joint Operations?

The conference concluded with a panel session which considered employing air power in a degraded environment and specifically the challenges that this poses in the joint context. Intentionally, the panellists chosen to present and act as a catalyst for discussion were not senior air force officers. Rather they were drawn from a mix of Army, Navy and Marine backgrounds from a broad swathe of nations. Their contributions proved invaluable ...!

Whilst accepting that all future warfare will be joint in nature, there are certain specific challenges for the delivery of future air power. The environment is likely to be urban and will be both contested and congested.

Effective command and control will remain at the heart of joint air power and the need for genuine mission command with its associated decentralised execution will probably rise.

The effectiveness of the joint force will be utterly reliant upon strategic



awareness, for which air assets, both manned and unmanned, will continue to play a decisive role. Robust, resilient communications architecture will help mitigate environmental degradation risks and live combined with synthetic training will play a pivotal role in ensuring the preparedness of NATO forces. As many attendees observed, 'we got good at NBC operations in the Cold War because we trained for them all the time.'

'We work best when we have habits.'

NATO's sophisticated and modern inventory of military capabilities was contrasted with certain Russian equipment. Whilst perhaps lacking the same degree of cutting edge technological wizardry in many areas, Russian equipment is often more basic, and is even 'agricultural' by comparison. However, such equipment is often physically robust and resilient and is therefore less vulnerable to environmental degradation than most Western systems. One hypothesis put forward was that NATO's reliance on ever-more-sophisticated systems has in itself introduced a critical vulnerability to its operations. The risks of this vulnerability must be well thought through and mitigated through doctrine, training and exercising. Once again, the audience was encouraged to revisit some of the lessons from the past ('back to the future') as NATO seeks to shape its future doctrine.

The need for mutual understanding between senior military commanders and politicians was once again reinforced, as was the irreversible trend of lawyers sitting on the shoulders of military planners and in operations centres. The legal framework within which a conflict is taking place must be clear and understood at all levels by soldiers, sailors and airmen alike. The media are a fact of life: much as the military might prefer to operate in splendid isolation, those days are gone. The media can, and will, take a view. They should not be treated as 'enemy forces' but rather as 'neutral forces'. Always tell them the truth. They are important agents for painting a picture for the public. A degraded environment is a risky environment and mistakes will, sadly, sometimes still be made. The media can help; honesty is the best policy.

It was highlighted that the challenges facing air power in a degraded environment are similar to those faced by land and maritime components, and, indeed, by our adversaries. Sometimes a degraded environment is a good thing. NATO's special forces community have long sought advantage from the chaos and confusion of such an environment in order to undertake their challenging roles. Marines have a similar outlook. In preparing forces to operate in a degraded environment, NATO has three choices: it can improvise (which is reliant on agile and adaptable equipment operated by flexible, agile warfighters); it can overcome (by developing state of the art work arounds, which is costly and takes time); or it can adapt (by planning for the bad and training for the worst whenever and wherever possible).

'We were good at this once. We can be good at it again.'



Conclusions

When the JAPCC planned this conference, it was never their expectation that the assembled attendees would solve any or all perceived problems regarding this topic, but rather that by providing a multinational pool of senior and respected experts from academia, the military, industry and aid organisations to debate the issues,

agreement might be reached on some broad themes which can then be considered by senior leaders across the Alliance. Feedback from attendees both during and in the immediate aftermath of the conference suggests that the JAPCC has met its aims.

Whilst myriad individual lessons and ideas fell out of discussion, with hopefully more to come as the follow up dialogue continues, there

were four primary and inter-linked themes which repeatedly arose during discussion:

- Whilst our contemporary strategic environment has changed beyond all recognition since the end of the Cold War, military planners could learn some valuable lessons regarding **preparedness** by going ‘back to the future’ and reviewing just how effective the Alliance’s preparations for operations in the anticipated degraded environment (in that case an NBC environment) were. Modern air power is dependent on complex technology, which brings with it unique and potentially battle-winning characteristics but also associated vulnerabilities. Obtaining the quality and quantity of capabilities that may be needed at the high end of the spectrum of modern warfare will be essential to future success. Whilst ever-more-sophisticated equipment may provide some answers, **training** – both live and virtual – in degraded environments that mirror those anticipated will be key.
- Not only does this enhance the Alliance’s ability to operate effectively (by training as you fight, fighting as you train), but it sends a very strong message of **deterrence** to any would-be adversary. There was a widespread view at the conference that the theories of deterrence, which used to be widely taught at staff colleges around the world, were now less well understood, as we have bred a generation trained – and blooded – in the narrow field of



counterinsurgency. This must change, and a deterrence-centred conversation needs to be held at the military and political levels within NATO.

- Similarly, some form of additional training to enhance the **communication**, trust, and understanding **between senior military and political leaders** is also necessary. The level of routine dialogue and communication that is now the standard may simply not exist in a heavily degraded environment. The contract between political and military leaders must include pre-planning for contingencies, pre-decisions based on clear indicators, and set Rules of Engagement (ROEs) to be invoked in the event of communications loss due to degradations. A key phrase to remember in this context: *'The Plan is nothing, Planning is everything.'* Quotation from Dwight D. Eisenhower.
- This decrease in communication capability will force a return to the concept of true decentralized execution, which will require **'mission command'** be given to military leaders at all levels. The concept of mission command was highlighted in several presentations as being essential to successful operations in a degraded environment. The proverbial 'thousand mile long screwdriver' will not exist and political leaders will simply have to trust the military with their intent and guidance through well-reasoned and clear ROEs.



The four key themes of this conference conversation, 1) Preparedness and Training, 2) Deterrence, 3) Communication between senior military and political leaders, and 4) Mission Command, provide NATO with a set of strong starting points from which to embark on a journey to a guaranteed capability to operate in a degraded environment, arguably no matter the domain involved (air, land, maritime, or

cyber). During his opening remarks for Day 2 of this conference, the Moderator noted that it was President Putin's birthday and remarked that the best birthday present NATO could send him was a message of strong resolve from this event. In his summation later that day, a senior leader undertook to deliver on that resolve and to initiate change where appropriate as a consequence of the previous two days. Underlining all the above points, he noted that these were all areas in which NATO must act if it is to continue to deliver safety and security for the Alliance!





The JAPCC invites you to attend the

2017 Air and Space Power Conference

from 10–12 October 2017, Messe Essen, Germany.

Watch www.japcc.org/conference for updates!

We hope to see you there!



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