TAKING THE APOCALYPSE OFF THE AGENDA:

PRESENTATION TO SOUTH ASIA FOUNDATION

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(Co-Author and Co-Coordinator (with Doug Mattern) of the Appeal on Nuclear Weapons Operating Status from 44 Nobel Prizewinners and 362 NGOs, presented to Kofi Annan prior to the May 2005 NPT Review Conference)

Abstract:

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Taking The Apocalypse Off The Agenda: Lowering the Operational Status of Nuclear Weapons Systems

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_The US and Russia maintain approximately 2,500 (5,000 total) each, of their roughly 25,000 nuclear weapons in a status such that they can be launched in less than 2 minutes. Their nuclear postures and policies depend on this as integral to strategic planning.

This means that senior decision-makers in an emergency are given astonishingly short times in which to make literally apocalyptic decisions.

Computer - generated 'glitches' have bought the world to within minutes of use of thousands of nuclear weapons on a number of terrifying occasions, yet nuclear postures in the US and Russia have

remained essentially unchanged since the 1960s. Nuclear postures dating from the cold - war have been the most potent threat in the short term to human existence, over a number of decades. The Indian government has since 1998, sponsored a resolution in the UN General Assembly calling for a lowering in the state of operational readiness of nuclear weapon systems which garners the support of about 3Ž4 of all governments. More recently, the author of this article's lobbying efforts convinced six governments to sponsor another such resolution which was adopted 141-3 in 2008. In June 2009, a workshop involving senior military and sponsored by New Zealand and Switzerland and the East-West Institute was held in Yverdon Les Bains near Geneva in which senior military and think tank personnel discussed ways to lower operational readiness. The issue of

operational readiness/alert status also figured very prominently in the recent report of the International Commission on Nuclear Nonproliferation and Disarmament(ICNND) headed by former Australian foreign minister Gareth Evans. Changing the operational status of nuclear weapons systems would literally 'take the apocalypse off the agenda'.

Introduction

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_The paper here is the most detailed, and up to date account of the operating status/operational readiness issue that the author is aware of.

It is based on ongoing presentations given to the United Nations at panels in 2006, 2007, 2008 and 2009 by this author and

repeatedly updated, with the addition of new material on the Yverdon workshop of the East-West Institute on operational readiness of nuclear weapon systems, and from the ICNND.

The result of my own and my colleague Steven Starr's work at the UN has been a resolution on Nuclear Weapons Operational Readiness that has now gone twice (Oct 2007 and Oct 2008) through the GA First Committee and plenary, most recently by 141 votes to 3. Ever since 1998, India has promoted the 'Reducing Nuclear

Dangers' resolution on operating status of nuclear weapon systems. However, worthy as Reducing Nuclear Dangers undoubtedly is, it has tended to gather support only from the non-aligned movement - a 'mere' 2/3-3/4 of the planet.

SO WHY IS OPERATIONAL READINESS IMPORTANT ANYWAY?

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_An Oct 2008 issue of the prestigious Bulletin of the Atomic Scientists in an article significantly entitled 'minimising the risk of human extinction' produced a 'laundry-list' of highly important 'to-do's, ranging from measures to ameliorate global warming, to watching briefs on biotechnology and nanotechnology, experiments at the LHC, and large incoming asteroids. Topping the list - to lower the operational status of nuclear weapon systems, followed by their elimination.

Arguably, lowering the operational readiness of strategic nuclear weapon systems may, by reducing the risk of a catastrophic nuclear exchange involving the core strategic arsenals of the US and Russia, be the single short-term measure that would do most to ensure the continued survival of civilisation, human beings, and living things in general.

Nuclear weapons Operating Status or Operational Readiness hides under a technical - sounding title, a potentially apocalyptic frisson that is - or was - quite out of

fashion, at least in the immediate post - cold-war era. But it is now undoubtedly a 'hot' topic, at least at the UN.

Discussions of accidental nuclear war have, with some reason, a decidedly 1980's feel to them. Unfortunately they still have a continuing relevance, even in 2010. The report of the ICNND, released just weeks ago, notes that:

'The prospect that a catastrophic nuclear exchange could be triggered by a false alarm is fearful and not fanciful' . [ICNND 2.39]

Only the lowering of the operating status of thousands of warheads currently on alert status will change this, literally 'taking the apocalypse off the (global) agenda'. While thousands of nuclear warheads remain in launch-ready status, the 'apocalypse' (that is to say the accidental extinction of civilisation, of most land-based life-forms, and possibly of humans by the use of large numbers of nuclear weapons), remains, unfortunately, a very real possibility.

However there may be room for cautious optimism that changes will

be made to nuclear posture, as the ICNND rightly urges, (possibly by the current nuclear posture review which this author and many others are trying to influence) and that some US-Russian measures may make the 'apocalypse' significantly less likely, though not yet zero probability.

A Bit of History

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_Operating Status, and the need for a lowering in the

Operational Readiness of nuclear weapons systems, is a hardy perennial of the nuclear debate. It has been singled out by a number of exalted authorities ranging from the Canberra Commission in 1996, to the Blix commission in 2006, by the Hoover Institute, and most recently by the East-West Institute in their Yverdon workshop, as a vital short-term risk reduction measure leading toward the total and unequivocal elimination of

nuclear arsenals under Article VI of the NPT, and the 13 Steps of the 2000 NPT Review final declaration. Still more recently (Dec 2009) the ICNND (International Commission on Nuclear Nonproliferation and Disarmament) has had a great deal to say about it.

In October 2007, at United Nations General Assembly First Committee, an NGO side-panel on nuclear weapons Operating Status/Operational Readiness

was organised by myself and Steven Starr. It was chaired by GSI's Rhianna Tyson, and attended by the ambassadors of New Zealand and Sweden, who together with Switzerland Chile and Nigeria were putting up a 'stand - alone' resolution on Operational Readiness. It was packed out with standing room only, and 80 diplomats sweating in a room designed for 50.

When, at that time, the L29

(GA62/36) resolution on operational readiness was voted on in First Committee and again in GA plenary, being adopted 139 to 3 with 34 abstentions, it attracted widespread media attention from the Times of India to the Washington Post and Australia's Age in spite of careful and low- key wording.

The Chile/New Zealand/Nigeria/Sweden/Switzerland resolution on

Operational Readiness came after a strong NGO campaign on the issue of Operating Status and after recommendations from a number of highly authoritative bodies including most recently the Blix Commission, (Recommendation 17), and an appeal signed by 44 Nobel Prizewinners organised by Doug Mattern of the Association of World Citizens and myself, ably assisted by Mr Alyn Ware of PNND.

Steve Starr of PSR and I together with Hans Kristensen, Alexei Pikaev of Russia, and Ira Helfand of PSR plus the Chilean and Swiss ambassadors, held a further panel on 16Oct 2008, that was heavily attended in spite of the fact that we had also held a debate at the International Peace Institute the preceding week on the same subject. That panel was officially sponsored by the Chilean,

Malaysian, Nigerian, New Zealand, Swedish and Swiss Governments.

A similar resolution to that of Oct 2007 was submitted in Oct 2008 by an enlarged group that now included Chile, Malaysia, New Zealand, Nigeria, Sweden and Switzerland. This comes at a time when a new US administration is in place and President Obama has indicated that he may be willing to consider lowering the operational readiness of US

nuclear weapons systems. This (and the ongoing Nuclear Posture Review) presents a vital opportunity that must be seized.

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_In Oct 2009, the six governments that sponsored the operational readiness resolutions in 2007 and 2008 decided, in the light of ongoing internal US reviews (esp the nuclear posture review) to not submit their resolution this year, but to do so next year (2010).

The hope was expressed that the resolution will finally be passed by 'consensus'.

Other resolutions also passed the 2007, 2008, and 2009 General Assembly that included, or comprised, a call to lower the Operational Readiness or Operating Status of nuclear weapons systems, notably India's reducing Nuclear Dangers, the NAM resolution, and the very - well supported 'Renewed

Determination Toward the Total Elimination of Nuclear Weapons', sponsored by Japan and Australia. This last, by 2009 had actually attracted US sponsorship in spite of a cautiously worded reference to lowering operational readiness. India however, was unable to vote for it.

In July 2008, Amb. Jurg Streuli on behalf of Chile, New Zealand, Nigeria, Sweden and Switzerland, made a joint

statement in the CD at an informal session, in which they reiterated the importance of progress on the operational readiness of nuclear weapons systems. Streuli outlined a number of reasons for lowering nuclear weapons operational readiness, noting that:

"We believe that, almost two decades after the end of the cold war, more action in this direction would be timely and reasonable. Achieving further

progress would be an important measure in preventing accidental nuclear war, and a step that moves us further along the path of reducing nuclear dangers."
(Statement by Amb. Streuli, CD, Geneva 31 July 2008)

Kissinger, Schultz, Nunn, Perry, and a large number of distinguished others under the umbrella of the Hoover Institute also paid considerable attention to the issue of operational

readiness/operating status, urging nuclear weapons states to:

"o Take steps to increase the warning and decision times for the launch of all nuclear-armed ballistic missiles, thereby reducing risks of accidental or unauthorised attacks. Reliance on launch procedures that deny command authorities sufficient time to make careful and prudent decisions is unnecessary and dangerous in

today's environment. Furthermore, developments in cyber-warfare pose new threats that could have disastrous consequences if the command-and-control systems of any nuclear-weapons state were compromised by mischievous or hostile hackers. Further steps could be implemented in time, as trust grows in the U.S.-Russian relationship, by introducing mutually agreed and verified physical barriers in the

command-and-control sequence.

o Discard any existing operational plans for massive attacks that still remain from the Cold War days. Interpreting deterrence as requiring mutual assured destruction (MAD) is an obsolete policy in today's world, with the U.S. and Russia formally having declared that they are allied against terrorism and no longer perceive each other as enemies."

Sam Nunn made a specific call in February 2008 at the Oslo Conference convened by the government of Norway, to lower the operational readiness of nuclear weapons systems, noting that:

"Making it through 60 years without a nuclear attack should not make us complacentŠ. If we're to avoid a catastrophe, all nuclear powers will have to be highly capable, careful, competent, rational, and lucky

every single time." He said with reference to having nuclear weapons able to be launched in two minutes that:

"That is absolutely unacceptable 17 years after the Cold War,"

[Associated Press Feb28 2008]

Most recently and most promisingly of all, President Obama has said he will:

"...Work with Russia to Increase

Warning and Decision Time: Keeping nuclear weapons ready to launch on a moment's notice is a dangerous relic of the Cold War. Barack Obama believes that we must address this dangerous situation. As President, Barack Obama will aim to work with Russia to end such Cold War policies in a mutual and verifiable manner."

While the ICNND notes in 2009 that:

'It is hard to believe that the

luck of the cold war - the near miracle of no nuclear exchange - can continue in perpetuity.'[ICNND 1.4p3]

The Nuclear Posture Review currently under way will examine, amongst other things, the question of operational readiness - that being central to nuclear 'posture.'

That Obama has decided to take a more and more 'hands on' approach with it is a

potentially good sign. (A letter from the author to President Obama on operational readiness of nuclear weapon systems and the nuclear posture review is appended)

Bush Administration on Operating Status

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_Opponents of reducing operational readiness have consistently sought to muddy the waters. When our resolution was first presented to the General Assembly in Oct 2007, the Bush administration claimed that its forces were not in fact on 'hair- trigger alert'. According to Ambassador Christine Rocca:

"Frankly, in order to take

action to comply with this request, we would first have to put our weapons on 'hair-trigger alert,' so we could then de-alert them. The fact is that U.S. nuclear forces are not and have never been, on 'hair-trigger alert.'"

The resolution itself carefully avoids the words 'hair-trigger alert'. The words

'Hair-trigger alert' have become somewhat of a ridiculous semantic game: Whether or not one could say that US strategic nuclear forces are or were on something called 'hair-trigger alert' it is clear that they are maintained in a state such that they can be launched virtually instantaneously and that procedures and postures

assume this, and are designed around this. (For a discussion of the terminology of operating status/operational readiness of nuclear weapon systems see my Colleague Steven Starr's excellent paper, 'New Terms for a Common Understanding of De-Alerting: Launch Before or After Nuclear Detonation') (Can be found on

www.nucleardarkness.org)

The response in Oct 2007 by the US representative to First Committee in misrepresenting the real status of US strategic nuclear weapons systems, followed by the Bush administrations attempt to present itself as implementing significant cuts in nuclear weapons,

however unconvincing, did at least show that it was feeling the heat. The withering rebuttals of the Bush administrations statements as misleading or downright false by Bruce Blair and Hans Kristensen did nothing for the credibility of Bush admin statements about the status of its arsenal. So far the Obama administration, whether or

not it delivers on its promise to take the apocalypse off the agenda, is at least not engaging in outright lying about the posture of its nuclear weapon systems. But let us hope it delivers on a lowered operational status.

Blair noted in his rebuttal that:

"The statement by

Christina Rocca, Permanent Representative of the United States to the Conference on Disarmament, in the General Debate of the First Committee on October 9, 2007, is highly inaccurate in its characterisation of the U.S. nuclear posture. Its assertions about the alert posture of the U.S. nuclear forces are contradicted by an overwhelming body of

evidence and knowledge.

The statement contains three key sentences about the U.S. alert posture in the opening paragraphs, quoted verbatim below:

'(1) The fact is that U.S. nuclear forces are not and have never been on "hair-trigger alert.

(2) U.S. nuclear forces are planned and postured to

provide the President with maximum decision time and flexibility.

(3) Multiple, rigorous procedural and technical safeguards exist to guard against accidental or unauthorised launch.'"

Blair pointed out that:

"No President has articulated this concern[0ver alert status] better than

President Bush did during his first presidential campaign: http://www.whitehouse.gov/news/releases/2001/05/20010501-10.html

In a major campaign speech on nuclear weapons policy that he delivered in

May 2000, then-presidential candidate Bush addressed concerns about the instant-reaction status of U.S. strategic nuclear forces. Declaring that "the United States should remove as many weapons as possible from high-alert, hair-trigger status," Bush argued that the capability for a "quick launch within minutes of warning" was an

"unnecessary vestige of cold-war confrontation." Not only was the quick-launch posture outdated, it was dangerous: "keeping so many weapons on high alert may create unacceptable risks of accidental or unauthorised launch."

Again to quote Blair's rebuttal of Christina Rocca:

"Major benefits would accrue from standing down ('de-alerting') the legacy postures. Keeping thousands of weapons ready to fly upon their receipt of a short sequence of simple computer signals is inherently risky. De-alerting would increase warning and decision time far beyond the short fuse inherent in current command

systems, thereby reducing the risk of mistaken launch to negligible proportions. De-alerting would also greatly strengthen safeguards against unauthorised launch and terrorist exploitation. In an era of terrorism and information warfare, staking the survival of humanity on the assumption that imperfect human and

technical systems of nuclear command and control will forever prevent a disastrous breakdown of safeguards against mistaken or unauthorised use of nuclear weapons is simply imprudent in the extreme."

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_Blairs arguments are as sound now as they were in October 2007!

Some More Arguments from the Anti-De-Alerting Side:

Former US ambassador to the CD Chris Ford argues, (and argued at the IPI debate between himself and Steve Starr and I in Oct 2008), and seemingly bases his argument on a December 1999 doctoral thesis by James R. Low, of

the Postgraduate Naval School at Monterey, [De-Alerting the US and Russian Nuclear Arsenals - An Unlikely method of Arms Control
, Thesis by James R. Low 1999] - that the actual conduct of crisis events in which computer or satellite errors caused systems of command and control to give indications of a launch

by one side or the other, shows that neither the US nor the Russian arsenals can be said to be on 'high - alert'.

Yet the very fact that missiles are kept by both sides - and this is conceded to be true - in a status in which they CAN be launched at short notice, and that procedures exist

and are rigorously rehearsed, in order to achieve just that, surely makes nonsense of this argument.

Low, in his thesis, [Low, Op Cit] refers to a number of occasions in which we proponents of de-alerting would argue that the world came just a little too close

to ending, as judgements made and decisions taken often by single military officers or presidential aides, backed us off from the apocalypse (ie the large-scale use of nuclear weapons) just in time.

Yet had strategic nuclear weapons systems NOT been maintained in a state in which immediate launch

was a very live option, these decisions would simply never ever have been on the agenda. Yet they were.

Slightly different decisions by a minuteman launch - control officer in 1979, by NORAD and STRATCOM personnel in 1980 and 1981, and by Colonel Stan Petrov at 12..30 Moscow time on 26 September 1983, could

very well have led to outcomes that were, literally, apocalyptic. One admires the cool and the resourcefulness of the personnel (whose very identity is now often forgotten) involved. The planet owes them an incalculable debt. They should never, ever, in a sane world, have been making decisions of such

consequence.

Similar considerations apply, and will apply increasingly, to the Indian and Pakistani nuclear arsenals. The official position of both India and Pakistan is that nuclear weapon systems are NOT maintained on 'alert': Both in India and Pakistan according to the official

story, warheads are kept physically separate from delivery vehicles. Indeed in Pakistan it is said that warhead 'pits' are kept separate from the rest of the warhead (surrounding high - explosives, firing systems etc).

However there are reasons to feel doubtful about this. Pictures of Pakistani missiles for example, show a typical east-european style 'TEL' (transporter-erector-launcher') of hybrid DPRK/Pakistani/Chinese provenance, in which a complete missile (with, presumably warhead or in some cases maybe dummy

or high -explosive warhead) is in a big tube on the back of a large multi-axle truck. This doesn't LOOK like a setup in which missile and warhead would be readily separable. Similar considerations may apply to the Indian side. Pakistani military commentators have also said that it would be a serious mistake to assume that Pakistani nukes were

not ready to fire.

It would not be unnatural to surmise that in reality perhaps at least some Pakistani warheads (and presumably some Indian warheads) are maintained in a ready-to-launch configuration, on TEL-mounted Ghauri missiles.

Given the ultra - short missile flight times between Pakistan and Delhi of just two minutes, a 'launch on warning' posture is however not possible as there is no 'warning'! But the increasing automation and centralisation of C3I systems that is taking place in both countries does indeed put the subcontinent on a 'hair trigger' of some

kind.

Low in his 1999 thesis, (and Chris Ford) also argued that the decision to launch would never be made lightly or 'hastily'. However, this is simply impossible given the compressed decision-making times available for military personnel, chiefs of staff,

and/or presidents. There is no time for it to be made anything other than hastily, and by people who are at the time being rushed by panic-stricken aides to doomsday command posts while anticipating immediate vaporisation/incineration. There is no possibility of a reflective response or indeed of one that has any grasp of what may actually

be taking place. The same consideration will apply in spades to any India-Pakistan nuclear crisis. People will be taking utterly apocalyptic decisions in time-scales measured in minutes with other people screaming hysterically at them. Hardly the best environment for considered decision-making.

Given that a missile travelling at roughly three times the speed of sound takes approximately 30 minutes to travel from Siberia to Washington or North Dakota, (and a lot less if it is submarine- launched) IF the possibility to launch on warning or to launch relatively swiftly is to remain a live option, then the order to do so must be given

within minutes. To hesitate to give that order is to take it off the menu of options, as, if the missile event is real, a good proportion of the silo-based missiles and probably the decision-makers, will have been vaporised by then.

Paradoxically, with an almost immediate missile flight time Pakistan-India, (of

2-3 minutes), there is no possibility to launch a riposte while the opponents missiles are in the air. However, once nuclear mayhem takes hold, with communication systems down (both from physical destruction and electromagnetic pulse) and many decision-makers vaporised, good decisions will not be possible.

Between India and Pakistan the pressure will be on to fire BEFORE the other side does so, placing still more extreme time pressures on decision- makers who will know that once the other has fired they may just no longer be around to order a response.

This means that having an immediate launch as an

option on the menu at all compresses decision-making times in a way that would never take place if an immediate launch were simply not an option. And this is precisely the point of our thesis, a point that Low and Ford deliberately missed.

If the missile event turns out not to be real (and we

know that in time) then nothing will have happened. However if the missile event is thought erroneously to be real (or we don't find out quickly enough that it was not real) then - unless a conscious decision has been made to ride it out - missiles will be launched and the other side will in turn launch their missiles, even if they had not in fact done so

before. Everything that we think we know about how nuclear command and control works suggests that while a decision to ride out an attack may be possible, the 'default option' as it were, is to order retaliation.

Again, these

considerations will apply in spades to any India-Pakistan nuclear standoff. Here, 'retaliation' morphs into pre-emption. I think my opponent is about to fire - so I fire on him - too bad I was wrong - now he really is going to incinerate meŠand because I have already vaporised HIS decision-makers, his degraded C3I can only do a

'counter-value' strike against my citiesŠ(or vice-versa).

Luckily, the 1987 'operation brasstacks' crisis, the Kargil crisis of 1990 and the 2002-2003 prolonged standoff were all just that - prolonged stand-offs. Still, there was at least one moment in Dec2002 turning into 2003, when the number one wire story around the

world read 'India, Pak move nukes to line of control'. Notwithstanding later official denials that this ever took place it was widely reported and in detail at the time. (and front-paged in the Times of India, NYT, Washington Post and other media). I believe it may have been the most dangerous moment ever in India-Pakistan relations, and

that the prospect of mutual incineration was, at least at that moment, all too real.

The reality of the threat of an India-Pakistan nuclear exchange is underlined by the following sample of Indian strategic nuclear thinking. Indian nuclear strategist, Brigadier Vijai Nair commented terrifyingly during the most recent 2007

India-Pak standoff that:

"India must make it perfectly clear to the Pakistani leadership that its response to a nuclear strike initiated against it would result in a massive "counter value" retaliation that would go beyond the horizon's of stabilising a battle field situation and would spell doom for the State. No matter the Pakistani

military's belief that it could limit a response proportional to its battlefield strike.

If this logic is understood, then it is time that India began to communicate the political will to carry out its threat irrespective of the lack of proportionality or global opinion. India is now a NWS and if it is to be recognised as such, it must demonstrate the political will

to carry out declared policy. This is as important as creating the nuclear arsenal and the cornerstone for deciding on the actual capabilities required to make India's strategic deterrent credible." [Brigadier Vijai Nair, quoted in my Nagpur paper,'Madness, Malice, Miscalculation and Malfunction', Jan 2008]

It is precisely the attempt to make a strategic deterrent 'credible' that unleashes the potential for omnicide. Nuclear weapons are 'intended' never to be used. But for them to have the deterrent effect they are supposed to have, I must show the opposite - that I am really, truly, willing to use them even if it means the destruction of the entire

planet including myself.(Šthen it is time that India began to communicate the political will to carry out its threat irrespective of the lack of proportionality or global opinionŠ) And this leads not only to the demented embrace of universal destruction but inexorably to nuclear postures that are closer and closer to 'hair- trigger'.

The fact that Pakistan's nuclear capabilities now equal and may possibly exceed those of India, and that there are almost certainly elements within the Pakistani military making pleas that are the exact mirror-image of those made by Vijai makes the situation all the more potentially dangerous.

The number of precursor events (including possible accidental failures of single - point safety pointed to by Geoffrey Forden) that can lead to an India-Pakistan nuclear conflict is disturbingly large. This is underlined by statements from India's General Deepak Kapoor [Nov 23, 2009 ANI] that nuclear war in the subcontinent is indeed a real

possibility. Kapoor noted that:

"The possibility of limited war under a nuclear overhang is still a reality, at least in the Indian sub-continent, along with West Asia, South Asia has gradually emerged as one of the epicentres of conflict and instability.

"Territorial disputes, provocation by proxy wars,

religious fundamentalism, radical extremism, ethnic tensions and socio-economic disparities are the hallmarks of South Asia,"

But shouldn't we be taking decisive action to make this less likely?

The decisions taken by personnel ranging from Colonel Stan to a minuteman launch control officer in 1979, to an unknown assistant to Boris Yeltsin on 26January 1995 that have thankfully resulted in us still being here to talk about them, were taken as it were, 'outside the box' of what could normally be

expected. To rely on the system to continue to come up with such decisions, and to come up with them each and every time, as James Low suggests in his 1999 thesis, is utterly foolhardy. It is in effect relying on divine intervention! (General Lee Butler does in fact attribute human survival to precisely that.)

A lowering of nuclear weapons systems operational readiness could be achieved with little more than an executive order which terminates the Cold War policy of Launch-on-Warning. This could serve as first step toward implementing more permanent changes in weapons systems (reversible de-alerting

measures such as blocking silo doors and removing nuclear warheads from missiles).

Even the simplest de-alerting measure, (say, opening a safety - switch) as long as it makes a launch within 30 minutes impossible, completely changes the time dynamic of the decision-making

process. While 'launch-on-warning' or 'quick launch' (call it whatever) remains an option, decisions must be made by senior or not so senior personnel within minutes and even seconds. Take that option off the operational agenda and this is no longer the case.

The UK's change in the

'notice to fire' of its submarine-launched missiles from minutes to days, is an example of what could be done. Such modest changes would make for a more stable strategic environment, facilitating further changes that would lead to the elimination of nuclear weapons.

France claims also to have already performed such changes in its nuclear posture for SLBMs. (see Frances 2007 EoV)

Hopefully the better numbers (141-3) in UNGA Oct/Dec2008 will encourage similar changes in other official and unofficial nuclear weapons states including especially India and

Pakistan.

Colonel Valery Yarynich formerly of the Russian/Soviet missile forces, has made a series of practical suggestions for taking nuclear weapons off alert, in which he suggests that nuclear weapons be arranged in three 'tiers', or categories, with weapons in a category in which launch

is possible within appx 24 hours (but not within minutes or 30 secs as currently), in a number of days, and a 'deep reserve' within weeks. (Colonel Varlery Yarynich, '100 nuclear wars', pers comm to Steve Starr and John Hallam, 2009)

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AN 'ACCIDENTAL APOCALYPSE'?

_The utterly devastating effect of a full-scale nuclear exchange has become almost standard, but perhaps unthinking, diplomatic 'boilerplate' in a

number of opening statements and resolutions, and has been so for decades no doubt. Yet there continue to be good reasons to repeat and to re-energise what I suspect for many UN delegations may have become something of an unthinking mantra. Recent (2006) work by Toon, Robock, and others on both India-Pakistan nuclear

exchanges involving as little as 0.3% of global nuclear arsenals and on full - scale US- Russia exchanges of operational nuclear weapons are no more cheery reading than they were in the 1980s when this work was first done. While the megatonnage has declined considerably from Colonel Stan Petrov's day, the millions of tonnes of soot

produced by the incineration of between half and 2/3 of humans in the first 40 minutes or so remains in the upper stratosphere ten times as long as thought back then, and even relatively small numbers of nuclear warheads aimed at cities turn out to have catastrophic global climatic effects.

A FEW QUOTES

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_First of all let's re-visit what Rajiv Gandhi said some years ago, a wonderful quote that has been recycled by Kissinger, Nunn,

et al:

Rajiv Gandhi, addressing the U.N. General Assembly on June 9, 1988, appealed:

"Nuclear war will not mean the death of a hundred million people. Or even a thousand million. It will mean the extinction of four thousand million: the end of life as we know it on our planet earth. We come to the United Nations to seek

your support. We seek your support to put a stop to this madness."

It is indeed a quote that indicates that India has in spite of its significant arsenal, (and the incendiary pronouncements of some) a genuine commitment to the

elimination of nuclear weapon systems. This commitment was enshrined in the 1988 Rajiv Gandhi peace plan, a plan that saw lowering operational readiness as central to its effectiveness. Let us take Rajiv at his word, and let us see if the peace plan can be revived.

In similar vein, according

to the 12 October2005 A/C.1/60/L.46 by Malaysia:

"...Convinced that the continuing existence of nuclear weapons poses a threat to all humanity, and that their use would have catastrophic consequences for all life on Earth, and recognizing that the only defence against a nuclear catastrophe is the total elimination of nuclear

weapons and the certainty that they will never be produced again,Š"

While the preamble to India's Reducing Nuclear Danger (A/C.1/60/L.52 of 12 October 2005, (same wording in 2007)) notes that:

"ŠBearing in mind that the use of nuclear weapons poses the most serious threat to mankind and to the

survival of civilisation,Š."

and

"ŠConsidering also that the hair-trigger alert of nuclear weapons carries

unacceptable risks of unintentional or accidental use of nuclear weapons, which would have catastrophic consequences for all mankind,Š"

These samples of text may be all too easily dismissed

as mere rhetoric, yet they are quite literally true, and must be taken utterly seriously. What is needed is renewed energy and commitment behind statements as to the gravity of the use of nuclear weapons. Hopefully the re-submitted operational readiness resolution will help to do that.

THE EFFECTS OF NUCLEAR WEAPONS USE

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_The use, by malice, madness, miscalculation, or

malfunction, of a number of thousands of nuclear warheads, (which would be the most likely outcome of an accidental nuclear exchange, not the firing of a single warhead), would still vastly exceed the threshold at which significant nuclear winter effects start. This remains true even at the relatively reduced warhead numbers held by the US and

Russia today, and under SORT. It will remain true down to levels of less than 100 warheads if these are used primarily for the destruction of cities.

The targeting of even a few hundred, one-megaton or half/quarter-megaton sized warheads on cities, would kill, more or less instantaneously, (within,

say, half an hour to an hour and a half) a large proportion (say, 1/2-2/3) of all humans, depending on the exact targeting of those missiles. The targeting of the worlds largest 100 cities (even by a single warhead each) would, clearly, be an utterly cataclysmic event for civilisation. Unfortunately, the targeting of cities is the most likely

strategy of any retaliatory nuclear strike, and a most likely outcome of any large nuclear conflict Scenarios in which anything from 100 warheads to thousands of warheads are used for 'city - busting' are not hypothetical worst - case scenarios designed to scare us (though scare us they should). They are actually the

most likely
, and the major intended, or 'default' use of nuclear weapons.

NUCLEAR WINTER REVISITED

_Recent studies of nuclear winter by Brian Toon and others, performed last year, re-confirmed the scientific validity of the concept of "nuclear winter" and have demonstrated that any conflict which targets even a tiny fraction of the global nuclear arsenal against large urban centres will cause catastrophic disruptions of the global

climate.

[NUCLEAR WINTER REVISITED WITH A MODERN CLIMATE MODEL AND CURRENT NUCLEAR ARSENALS: STILL CATASTROPHIC CONSEQUENCES Alan Robock, Luke Oman 1 , and Georgiy L. Stenchikov Nov 2006 Rutgers]

According to this study:

"Twenty years ago, the results of climate model simulations of the response to smoke and dust from a massive nuclear exchange between the superpowers could be summarized as "nuclear winter," with rapid temperature, precipitation, and insolation drops at the surface that would threaten global agriculture for at least a year. The global nuclear

arsenal has fallen by a factor of three since then, but there has been an expansion of the number of nuclear weapons states, with other states trying to develop nuclear arsenals. We use a modern climate model to re-examine the climate response to a range of nuclear wars, producing 50 and 150 Tg of smoke, using moderate, and large

portions of the current global arsenal, and find that there would be significant climatic responses to all the scenarios. This is the first time that an atmosphere-ocean general circulation model has been used for such a simulation, and the first time that 10-yr simulations have been conducted. The response to the 150 Tg scenario can still

be characterized as "nuclear winter," but both produce global catastrophic consequences. The changes are more long-lasting than previously thought, however, because the new model, National Aeronautics and Space Administration Goddard Institute for Space Studies ModelE, is able to represent the atmosphere up to 80 km,

and simulates plume rise to the middle and upper stratosphere, producing a long aerosol lifetime. The indirect effects of nuclear weapons would have devastating consequences for the planet, and continued nuclear arsenal reductions will be needed before the threat of nuclear winter is removed from the Earth."

Another recent paper produced by Toon and Mills in February 2008 ['Massive global ozone loss predicted following regional nuclear conflict

Michael J. Mills* Ý , Owen B. Toon* ý , Richard P. Turco § , Douglas E. Kinnison , and Rolando R.

Garcia] - Predicted long-lasting damage to the Ozone layer as a result of an India-Pakistan nuclear conflict involving of the order of 100 warheads used for the destruction of cities in the subcontinent.

Studies by Toon Et Al on 'regional' (for which read 'India-Pakistan') nuclear conflict and their subsequent

analysis by Ira Helfand of PSR, [Ira Helfand PSR 2007 An Assessment of the Extent of Projected Global Famine Resulting From Limited, Regional Nuclear War], also show that a 'regional'' nuclear conflict, which targeted large population centres in the sub-tropics with 100 Hiroshima-size weapons -about 0.3% of the global

nuclear arsenal - could produce as many fatalities as World War II and would significantly disrupt the global climate for at least a decade. Following this 'small'' exchange, the world would rapidly experience cold conditions not felt since pre-industrial times.

According to Helfand [OpCit]

"While it is not possible to estimate the precise extent of the global famine that would follow a regional nuclear war, it seems reasonable to postulate a total global death toll in the range of one billion from starvation alone."

This is from, it must be borne in mind, a nuclear exchange involving of the

order of 0.3% of all warheads and 0.03% of total global megatonnage.

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COULD A LARGE - SCALE NUCLEAR EXCHANGE EVER BE ANYWHERE ON THE AGENDA?

_If the results of a 'boutique' nuclear conflict between regional powers at 0.3% of global nuclear arsenals are so dire, what are we to make of a large - scale exchange?

It is precisely a large scale exchange involving the core

strategic arsenals of major nuclear powers that is the most likely outcome of miscalculation and/or technical malfunction between the US and Russia.

To repeat the pregnant worlds of the ICNND who clearly take this prospect most seriously:

'The prospect that a catastrophic nuclear

exchange could be triggered by a false alarm is fearful and not fanciful' .

The commission repeats this theme in a variety of ways and it would be correct to say that this is perhaps the single most 'urgent' of their concerns.

Surely, in this context, throw - away lines from both

US and Russian spokespeople during the Bush administration about war between NATO and Russia must be regarded with the utmost gravity. Fortunately the situation - and the rhetoric - has improved significantly since the election of the Obama administration.

'LAUNCH ON WARNING'

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_Nuclear weapons command and control systems still are largely designed for the launch, by validly transmitted 'go'

codes, sent by the proper authorities, of relatively large salvos of strategic weapons all at once. Cold-war wargames scenarios and operational plans on both sides were designed on the assumption that a 'bolt from the blue' attack would be massive, and standard operating plans on both sides, envisaged (and still envisage) massive

retaliation, sometimes of an automated nature. These nuclear postures have not fundamentally changed.

Bruce Blair notes that:

"Both the Kremlin and the White House routinely re-issue presidential nuclear guidance that requires their respective nuclear forces to be constantly prepared to fight a large-scale nuclear

war with each other at a moment's notice. These forces are assigned long lists of targets, running into the thousands on each side, to strike in the event of war, and they are expected to inflict serious damage with high probability on all target categories - opposing nuclear forces, conventional forces, war-supporting industry, and leadership.

The forces cannot achieve this wartime objective of high 'damage expectancy' if the opposing forces destroy them first, and so both strategic arsenals kept on launch-ready alert. Their command and early warning networks maintain a constant vigil and readiness to launch the forces on warning of incoming

warheads fired by the opposing side.

This fuse is no longer today than it was during the Cold War. Both nuclear superpowers manage their strategic arsenals in almost exactly the same manner as they did during the Cold

War."

And

"The combined firepower that could be unleashed within these short time frames measured in minutes is approximately 2,654 high-yield nuclear warheads (1,382 U.S. and 1,272 Russian) - the equivalent of approximately 100,000 Hiroshima bombs (assuming the Hiroshima bomb yielded

15 kilotons of explosive power)." [Blair Paper to Oslo Conference Feb 2008]

Alexei Pikaev (Carnegie Moscow) makes exactly the same point:

"According to experts, as of today, Russia and the United States each possess approximately 6,000 strategic weapons. In this, a significant portion of the

nuclear warheads is continuously maintained on high alert. This means that Russian or U.S. ICBMs can be launched in just minutes upon the receipt of the launch command, and the SLBMs deployed on the patrolling strategic submarines can be launched in 15 minutes. The total number of warheads maintained on high alert by

both the Russian and the U.S. side equals 3,500-4,000.1

It seems that the launch-on-warning concept, which presupposes continuous combat readiness of the most vulnerable systems, such as silo-launched ICBMs, coupled with a flawed early warning system (EWS), increases the probability of

an accidental nuclear war."
[Alexei Pikaev, Briefing Book , 13/9/08] (emphasis mine)

General Eugene Habinger, former chief of STRATCOM, noted in his paper to the Yverdon Les Bains workshop that:

'Placing military forces on some level of alert status is

not a new concept and has been a basic tenet of military readiness for centuries. So it comes as no surprise that as the Cold War progressed into the 1950's and beyond, the United States, Soviet Union, Great Britain, France, and China placed at least some of their respective nuclear forces on alert. What is surprising, however, is the fact that nearly 20

years after the end of the Cold War those nations continue to have at least some of their nuclear forces at essentially the same alert postures'.

And

'The challenge is not with bomber or ballistic missile submarine forces which can be taken off alert and regenerated rather quickly, but with the ICBM forces.

The natural state of a silo based ICBM, except in the China case, was designed and engineered to be sitting in a silo, fueled, power on, warhead in place, ready for an immediate launch upon the receipt of an authorized launch directive. There are certainly technical challenges to de-alerting ICBMs, but those challenges are what professional

engineers are trained to overcome. As a note, the Chinese have it about right and have done so for most of the Cold War and beyond. Their silo based ICBM force is not fueled and the warheads not mated.'

[General Eugene Habinger - 'De-Alerting of Nuclear Forces - A Policy Imperative' Paper delivered at Workshop in Yverdon Les

Bains 21-23 June 2009]

Most recently of all, (December 2009) The International Commission on Nuclear Nonproliferation and Disarmament had a great deal to say on the subject of operational readiness, a subject it seemed to regard with some alarm. The author of this paper is gratified to see some of the input he

and others made reflected in statement after statement. It is clear that the ICNND consulted widely on the subject of operational readiness and that they have been not a little troubled by what they have discovered.

The Commission noted that:

'Maintaining thousands of

nuclear warheads on dangerously high launch on warning alert is the ultimate absurdity of nuclear deterrence twenty years after the end of the cold war, when political, economic, and security relations, no least amongst the five NPT nuclear weapon states, render deliberate nuclear attack virtually unthinkable. And it is extremely

dangerous above all because of the risk of human error in the stress of the moment as noted below. But, as will be discussed further in section 17 in the context of an action agenda for disarmament, early 'de-alerting' is likely to prove much more difficult than might appear at first sight.' [ICNND 2.42]

'ROGUE LAUNCHES' OR CORE STRATEGIC INVENTORY?

_The events in which, a number of times, a massive nuclear exchange might have taken place if things had gone just a little bit more wrong, or if key personnel had made decisions slightly other than the ones that did make, _all involved potential use of the core strategic inventories of the US and Russia

.

That the number of warheads potentially involved in these terrifying events was many times the roughly 2654 warheads presently on LoW status (Bruce Blairs figure) should give us pause.

Events in which psychotic lone commanders were/are in a position to launch one

or two warheads have less credibility. Nuclear command and control systems are much more centralised than that. The launch of strategic nuclear weapons by a single individual is - at least theoretically - not possible. However, such a launch by technical malfunction DOES seem to be possible.

There are accounts of least one event in 1979 (and maybe another in 1984) in which a US Minuteman practice launch sequence for a group of 10 missile silos with a single control - centre is supposed to have turned into the real thing and become unstoppable. Launch was prevented only by driving heavy military vehicles on top of silo doors.

Here however, the heroic and quick-thinking and far from psychotic Minuteman commander actually prevented the possible launch in a malfunctioning system. As with Colonel Stan Petrov, humanity owes this man. (The author has heard several versions of this including one direct from the meditation teacher of the missileer involved, sitting

next to me on a bus to Canberra, who questioned him in detail as to why he'd resigned from the US missile corps)

Generally however, the drama all takes place amid wailing sirens and flashing lights at the nuclear command and control centre, (Stratcom, Norad or Serpukhov-15) and/or

sweating aides at the Presidential nuclear briefcase. (as in the 1995 Norwegian sounding rocket incident)

Thus, Colonel Stan Petrov's decision on the night of 26 Sept 1983 not to pass a missile alert on to his superiors, (who were convinced that NATO intended to initiate nuclear

war against them at any time), and to inform those who already knew that it was in his opinion a false alarm, prevented the use of the then enormous Russian nuclear arsenal against the US and its allies.

Colonel Stan's false alert it turns out, had been caused by an unusual combination of high clouds directly over

the North Dakota launch sites that looked to the then state-of-the-art Soviet spy satellite, exactly like a series of launches. Colonel Stan judged it to be false on the reasonable grounds that only five launches were shown. One wonders what his decision would have been, had he (a) heard of the 1979 Minuteman launch incident (b) if the system

had instead registered hundreds of launches.

(there are numerous accounts of the Sept26 1983 event - Google Colonel Stanislav Petrov. A film about him is due for release soon.)

Incidents in the early 1980s in the US in which a malfunctioning 40 cent chip

in a switching station in Colorado fooled computers at NORAD into believing that 'thousands' of missiles were coming in, similarly took place precisely at NORAD itself, and resulted in higher levels of alert on the part of ALL US nuclear forces, which were prepared to launch before the fault was located.

Accounts of this incident state that minuteman crews were ordered to be ready to launch, nuclear-armed fighter-bombers were taxied to the edges of runways with engines running, and the National Emergency Airborne Command Post (NEACP) otherwise known as the 'Doomsday Plane' was launched.

A 1979 incident in which a practice tape simulating a massive Soviet attack was mistakenly inserted into the main command computer at NORAD, causing in the words of a congressional committee who happened to be there at the time, 'blind panic' similarly resulted in threat-assessment conferences and in the ordering of nuclear forces to

be ready to launch.

According to Forden:

"The alert did not stop with the U.S. ICBM force. The entire continental air defence interceptor force was put on alert, and at least 10 fighters took off. Furthermore, the National Emergency Airborne Command Post, the president's "doomsday

plane," was also launched, but without the president on board. It was later determined that a realistic training tape had been inadvertently inserted into the computer running the nation's early-warning programs."

[Geoffrey Forden, 'False

Alarms on the Nuclear Front'

The incident is also recounted by Alan Philips, and Pikaev (Op Cit)]

My point here is that what we were dealing with in all these situations was not situations in which a lone 'rogue' commander acting alone (or a faulty piece of equipment or software) caused a single launch, but

situations in which what was at stake was the launch of the central strategic nuclear inventories of the US and Russia with all that implies. Fortunately in each case, sanity prevailed.

The ICNND speculates on the way an accidental nuclear war might erupt and concludes that system vulnerability (especially in

new and evolving command and control systems such as those of India and Pakistan) is a crucial factor, much more important than 'rogue commanders', who probably aren't in a position to launch even single missiles let alone salvos of them:

'Of much greater concern is the possibility of miscalculation or a decision based on the wrong

information by the NCA (National Command Authority) under the stress of a possible crisis, in particular if strategic doctrine and operational plans require a very quick decision on strategic force employment: The launch on warning postures described above. Added to that is now a very real concern about the new threat of cyber

attack (discussed further in section 4) - likely to get more rather than less real with future technological advances - which might disrupt computerised networks and emulate false alarms or initiate launch command sequence.' [ICNND 2.44]

It is interesting (and worrying) to speculate on

the course of putative technical crises during an India-Pakistan nuclear stand-off. If there had been such a combination of banal computer or satellite error in 2002-3, would we still be here in Delhi to discuss it? Would Delhi still be here? Maybe, maybe not.

James Low in his 1999 thesis already discussed,

seems to suggest that we can ALWAYS 'rely' on a Colonel Stan Petrov to save us from oblivion each time something like this takes place simply because we have in fact survived thus far. It is well to remember that Colonel Stan had in fact swapped his shift with an officer junior to him, who would have 'gone by the book', in which case we

wouldn't be talking about it now. Our survival thus far may prompt a belief in miracles, but should we continue to rely on an unending supply of miracles?

Even in the case of the technical 'rogue launch' prevented by the heroic action of the Minuteman commander in driving heavy

military vehicles onto silo doors, what was at stake was the launch of 10 missiles each with 10 warheads = 100 warheads, seemingly enough by itself to cause a mini-nuclear-winter, and immediate casualties in the tens to the hundreds of millions, depending on the precise targeting of those warheads. The likely

retaliation for this by what remained of the USSR (including the bulk of its strategic forces) would certainly have been terminal for the existence of the United States, and would most likely have involved the main strategic arsenals of both nations, and thus thousands (and possibly over ten thousand) of warheads. (According to

standard procedures, retaliation for an attack of 100 warheads would certainly have been massive) There is of course nothing in any way certain about this, nor does there need to be. It is enough to indicate that the risk of a civilisation-ending event would have been very, very, high.

The 1995 incident in which Russian perimeter defence mistook a Norwegian weather research rocket aimed at the Aurora Borealis for an incoming US submarine-launched ICBM, was similarly resolved at the level of the Presidential nuclear briefcase. Again, according to Forden:

"That scientific rocket caused a dangerous

moment in the nuclear age. Russia was poised, for a few moments at least, to launch a full-scale nuclear attack on the United States. In fact, President Boris Yeltsin stated the next day that he had activated his "nuclear football" -- a device that allows the Russian president to communicate with his top military advisers and review the situation online -- for the

first time."

Again, similar considerations will apply during any India - Pakistan nuclear standoff.

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THE JDEC - A LOST OPPORTUNITY?

_It is certain that the Norwegian rocket incident shook Yeltsin sufficiently that it became a reason for him to propose to President Clinton the creation of a joint strategic stability centre.

A memorandum of Understanding to this effect was signed in 1998. ("Memorandum of Agreement Between the United States of America and the Russian Federation on the Establishment of a Joint Centre for the Exchange of Data from Early Warning Systems and Notifications of Missile Launches (JDEC MOA)".)

It is a matter for profound regret that while both governments have many times reaffirmed the desirability of establishing such a centre, it has not actually taken place. A kind of trial run took place over the 1999/2000Y2K 'rollover' at Petersen Airforce Base and was quite successful. However, the site outside

Moscow remained for many years vacant and has now been assigned for other use.

John Stienbruner suggests however, that unless the data exchanged is of a fairly detailed nature - possibly more detailed than US military might be willing to reveal - that the JDEC might not be of that much use in a real crisis. [Significance of

Joint Missile Surveillance

- John Stienbruner/CISS July 2001] Clearly the JDEC is no substitute for actually lowering the operational readiness of nuclear weapons systems. However even this possibly inadequate step has not been taken in spite of reiterated agreements to do so. Will the most recent Medvedev/Obama

agreement be any different?

Implementation of this memorandum of understanding, while it might not completely eliminate the possibility of a large-scale accidental nuclear exchange, would nonetheless be a step forward and could be a potentially positive response to the global consensus

demonstrated by L29(GA62/36)'s voting pattern, and the 141-3 votes of Oct/Dec2008 on L5, that governments worldwide demand that strategic nuclear weapons systems no longer be kept in cold-war-style, high -alert postures.

(and that, contra statements by James Low, Ford, and Rocca, they are

indeed so maintained)

The most recent developments on JDEC suggest that Presidents Obama and Medvedev will again seek to revive the idea. If this means that JDEC, agreed to no less than three times will become a reality this will, notwithstanding John Stienbrunner of MIT's

reservations, be real progress, albeit limited progress, toward taking the apocalypse off the agenda. Let us hope that it is fourth time lucky and that JDEC comes to pass.

Indian and Pakistani policy makers ought perhaps to ask themselves whether similar confidence - building measures between India

and Pakistan might be considered. In the India-Pakistan context, a joint data - sharing enterprise such as JDEC would both bring the armed forces of both countries together in a tension-lowering way and would provide assurance of good intentions on both sides. Alternatively, the two countries might want or

prefer to participate in a US-Russian JDEC along with possibly China. Either way, there is potential for benefit and for activities that would do much to build confidence and to increase real strategic stability.

LOWERING

OPERATIONAL READINESS

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_In each potentially civilisation-ending incident, it was the keeping of those central strategic nuclear inventories on LoW or quick-launch status, and the doctrine of 'launch on

warning' associated with that status, that made the launch of those inventories an issue at all. Had those systems not been on LoW status, the question of 'pressing the button' (and thus potentially ending civilisation and much else besides)' could never have been posed.

Taking those strategic

systems OFF LoW status, however it was done, would, I believe, have meant that fallible stressed individuals would never have been asked questions whose menu of answers would include this apocalyptic possibility.

In slightly more technical terms, eliminating the policy of LoW by presidential

decree would:

"...quickly and significantly reduce the chances of an accidental nuclear war caused by faulty or misinterpreted Early Warning System data".

VARIOUS RECCOMMENDATIONS TO LOWER OPERATIONAL READINESS/OPERATING STATUS

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_Taking nuclear weapons

systems off LoW has been recommended by a number of bodies, starting with the 1996 report of the Canberra Commission, who saw it as a process involving separation of the warheads from their delivery vehicles. Much simpler measures can be envisaged including ones that would simply make it impossible to immediately launch missiles, or to launch

them at a few minutes notice. I understand that in the case of UK submarine - launched missiles, the 'notice to fire' was altered from minutes to days some 10 years ago. France as we saw previously makes similar claims.

The Blix Report notes that:

"Many such (nuclear) weapons remain on

hair-trigger alert and still assigned for retaliatory use on short notice - even before the warheads of one side reach the other's territory. Since the flight-time of US and Russian land-based missiles is between 25 and 30 minutes - significantly less for seabased missiles - such nuclear postures risk causing nuclear exchanges by accident, technical

malfunction or strategic miscalculation." (Blix, Weapons of Terror p92)

While according to Blix Recommendation 17:

"Russia and the United States should agree on reciprocal steps to take their nuclear weapons off hair-trigger alert and should create a joint commission to facilitate this goal. They should undertake to

eliminate the launch-on-warning option from their nuclear war plans, while implementing a controlled parallel decrease in operational readiness of a large part of their strategic forces, through:

--reducing the number of strategic submarines at sea and lowering their technical readiness to launch while in port ;

--storing nuclear bombs and air-launched cruise missiles separately from relevant air fields;

--storing separately nose cones and/or warheads of most intercontinental ballistic missiles or taking other technical measures to reduce their readiness." (Blix, Weapons of Terror p94)

These recommendations are not dissimilar to those of the Canberra Commission 13 years ago in 1996.

This brings us to the successor to the Canberra Commission, presided over by none other than Gareth Evans who as foreign minister initiated the Canberra Commission. The International Commission on

Nuclear Npnproliferation and Disarmament (ICNND) recommended that:

-Force Deployment and Alert Status. Changes should be made as soon as possible to ensure that, while remaining demonstrably survivable to a disarming first strike, nuclear forces are not instantly useable. Stability should be maximized by deployments

and launch alert status being transparent. [7.12-15; 17.40-50]

-The decision-making fuse for the launch of any nuclear weapons must be lengthened, and weapons taken off launch-on-warning alert as soon as possible. [17.43]

and

Recommendations on

Force Posture: Launch Alert Status and Transparency

55

The basic objective is to achieve changes to deployment as soon as possible which ensure that, while remaining demonstrably survivable to a disarming first strike, nuclear forces are not instantly useable. Stability should be

maximised by deployments and launch alert status being transparent.[7-12-15, 17.40-50]

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It is crucial that ways be found to lengthen the decision - making fuse for the launch of any nuclear weapons and in particular - while recognising the difficulty and complexity of

the negotiating process - that weapons be taken off launch-on-warning alert as soon as possible [17.43]

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In order to achieve strategic dialogues capable of making real progress on disarmament, maximum possible transparency in both nuclear doctrine and force posture should be

offered by all nuclear - armed states [17.44]

A number of legislatures have expressed support for measures to lower nuclear weapons operating status over the years, including in November 1999, the European Parliament (unanimously) and the Australian Senate. Again in

2005, the Australian Senate and the European Parliament welcomed the appeal coordinated by Mr Doug Mattern of the Association of World Citizens and myself that was endorsed by 44 Nobels and 362 NGOs. Some of you will be familiar with that appeal.

Lowering operating status has also figured in greater or lesser degrees of prominence in a number of resolutions other than L29(GA62/36) in the General Assembly over the years. It is also a part of the '13 steps' listed in the final declaration of the Year 2000 NPT Review.

A number of countries

including New Zealand, Canada, Chile, and Costa Rica highlighted the issue of operating status in a paper to the UN Disarmament Commission in April of 2006.

Operating status was included in some way in a number of addresses and working papers to the May2005 NPT Review conference including in Kofi

Annans opening speech and in the working paper presented by New Zealand on behalf of New Agenda, and working papers or opening addresses by Sweden, Japan, and Australia amongst others.

The chairs summary of the 2007 prepcom mentioned it briefly:

"11. States parties also

attached significance to reducing the deployed status of nuclear weapons through de-alerting, to reducing reliance on nuclear weapons, and to securing greater information from the nuclear-weapon States on the active and reserve status of nuclear arsenals."

It was treated much more fully in the factual report of the 2008 Prepcom in

Geneva.:

"15. States parties also attached significance to reducing the deployed status of nuclear weapons through de-alerting and de-targeting, to reducing reliance on nuclear weapons and to securing greater information from nuclear-weapon States on the active and reserve status of nuclear arsenals

with a view to increasing confidence among all States parties. They welcomed the efforts of some nuclear-weapon States in this regard, noting such practical measures can raise the threshold for uses of nuclear weapons and help avoid the risk of accidents and miscalculation."

It is also prominent in the

joint Australia-Japan resolution, Renewed Determination, of October 2005,2006,2007,2008 and 2009:

"6. Calls for the nuclear-weapon States to further reduce the operational status of nuclear weapons systems in ways that promote international stability and security;"

And it is worthy to note that this is perhaps the most heavily supported nuclear disarmament resolution that there is, adopted in 2005 and 2006, 2007, and 2008 with the support of Russia, UK, France and all NATO states except the US. (and in a dramatic turnaround in 2009, with the active sponsorship of the US)

The 2009 sponsorship by the US of a resolution in which operational readiness of nuclear weapons systems is so prominent is surely highly significant and in a positive way.

However, Renewed Determination treats Operating Status in a single short sentence amongst many other also important

matters.

According to the less heavily supported NAM resolution which nonetheless contains much that is worthwhile:

"6. Also urges the nuclear-weapon States, as an interim measure, to de-alert and deactivate immediately their nuclear weapons and to take other

concrete measures to reduce further the operational status of their nuclear-weapon systems;" (A/C.1/60/L.36 12 October 2005).

Lowering operating status is central to the Reducing Nuclear Dangers resolution put by India,(A/C.1/60/L.52 - language is exactly the same in 2007) though that

resolution refers only to US and Russian nuclear weapons. In spite of the perceived double-standard by some, in urging the lowering of operating status of US and Russian nuclear weapons, while putting (arguably) the subcontinent on a hair-trigger basis, Reducing Nuclear Dangers is a text worthy of much wider support than it enjoys.

This is particularly so because it sets the lowering of operating status within a broader context of changes in nuclear doctrine and policy.

India itself called for some of those who voted for L29(GA62/36) to support Reducing Nuclear Dangers, and this call is repeated in India's statement to the

Disarmament Commission, which gave some prominence to issues relating to operating status and to nuclear doctrine.

Many countries who could not bring themselves to support India's Reducing Nuclear Dangers supported the L29(GA62/36) resolution, passing 139 to 3 in the GA plenary, and

Germany, Austria, Norway, Finland, Sweden, Spain, Portugal, Iceland, Ireland, NZ, and Japan out of 'developed' countries, voting in favour, while every country that voted for Reducing Nuclear Dangers voted for L29, operational readiness. The vote for L29/GA62/36 sends a strong message, reinforced by strong support for Renewed

Determination, NAM, and Reducing Nuclear Dangers.

Better co-operation between supporters of the operational readiness resolution(s), and India's Reducing Nuclear Dangers is clearly desirable.

Operating Status/Operational Readiness also figured in working papers in the 2007 NPT Prepcom by Norway, Canada, Australia, Japan, and New Agenda.

New Agenda in its previous May2007 NPT Prepcom working paper notes that:

"A mutual lowering of the operational readiness of

deployed nuclear weapons would build confidence between the nuclear powers and reduce the threat of nuclear weapons use, intentional or accidental. While this can never substitute for irreversible reductions in their weapons, it is essential that the nuclear weapons states continue in this vein and remove the

launch-on-warning option from their security doctrines by agreeing on reciprocal steps to take their nuclear weapons off hair-trigger alert. The continuation of the cold-war high alert status is of little sense in today's security environment and only serves to exacerbate the danger posed by the existence of these weapons."

On 15 October 2009, in the cavernous Conference Room 4, (this author was present) the six governments that sponsor the resolution on operational readiness presented the 'outcome document' from the workshop in Yverdon Les Bains, where generals, and policymakers from the US and Russia had met and

discussed operational readiness of nuclear weapons systems and how to lower them under the auspices of the East-West Institute and the Swiss and NZ governments.

The 'outcome document's' executive summary is worth quoting in full because of the excellent overview it gives over the entire operational

readiness issue:

"Nearly twenty years after the end of the Cold War, Russia and the United States continue to maintain hundreds of nuclear weapons capable of striking the other side, and to have at least some of these nuclear forces at Cold War levels of alert, that is, ready to fire within a few minutes of receiving an order to do

so.

Even during the Cold War, alert levels were not static and moved up or down in step with changes in the strategic and tactical environments. While the operational readiness of some weapon systems has been reduced, there has been no major change in the readiness levels of most of

the nuclear weapon systems in the post -Cold-War era. This is in considerable part because Russia and the United States believe that despite fundamental changes in their overall relationship, vital interest requires maintaining a high level of nuclear deterrence.

The post -Cold- War experience also

demonstrates that alert levels can be reduced and measures can be taken to reduce the risk of accidents or unauthorized takeover of nuclear weapons. Further measures could be taken to reduce operational readiness of nuclear arsenals. U.S. and Russian experts alike stressed survivability as a key element in the acceptance

of these measures because of its importance to maintaining deterrence.

Cold War legacy postures under which thousands of weapons are kept on high readiness can be altered through top-down policy initiatives, as was the case in the early 1990s with one class of nuclear weapons.

Technical issues related to the peculiar "ready " character of land-based ICBMs can be resolved by bringing designers into discussions on decreasing operational readiness of nuclear weapons. There was a sense that technical solutions to the problems of nuclear risk reduction are available and can be multilateralized. Information

sharing can help implementation of these solutions.

Concerns over "re-alerting "races and vulnerability of "de-alerted "forces to conventional or nuclear strikes during "reversal " can be addressed through survivable forces, dialogue, and confidence building.

Other nuclear weapon states apparently have alert practices that differ from those of Russia and the United States. It was debated whether this state of affairs can be ascribed to an absence of nuclear war fighting capabilities or to a different assessment of the post -Cold War nuclear security environment.

There was a sense that nuclear doctrines and alert practices of different nuclear weapon states cannot be analyzed in a vacuum and must be evaluated as parts of a larger political and security framework.

Non-nuclear weapon states

'experts forcefully asserted the legitimate interest their states have in the issue and underlined the practical and constructive approach of the U.N.General Assembly resolution on reducing operational readiness of nuclear forces.

Non-nuclear weapon states say that lowering of the operational status of nuclear

weapons would both reduce the risk of accidental or unintended nuclear war and provide a much-needed practical boost for disarmament and nonproliferation. Decreasing the operational readiness of nuclear weapons would be a highly desirable confidence-building measure between nuclear weapon states and

non-nuclear weapon states. It would also be a welcome step in the lead-up to the 2010 Non-Proliferation Treaty (NPT)Review Conference.

The principal objection to decreasing operational readiness of nuclear weapons as commonly under stood has been that it seeks to address a problem

that does not exist. Even if it does exist in some instances, it can be addressed by technical and organizational means updated to cover current threats such as nuclear terrorism. Furthermore, the remedy itself could end up undermining nuclear deterrence and strategic or crisis stability.

The insight that emerged during the meeting was that the above objection flows from a narrow view of de-alerting as meaning measures that make it physically impossible to promptly launch an attack on order.

Such a view also leads to a somewhat excessive focus on verification of technical

measures, which ends up giving an easy argument to the opponents of de-alerting -that it is not verifiable and therefore should not be attempted.

There are no fundamental obstacles to many useful measures of decreasing operational readiness of nuclear weapons, provided the issue is not framed

narrowly. De-alert has to be seen not only as a technical fix but also as a strategic step in de-emphasizing the military role of nuclear weapons, in other words, moving to retaliatory strike postures and doctrines instead of legacy preemptive or "launch on warning " postures.

The ongoing U.S. Nuclear Posture Review (NPR)offers an opportunity for such a perceptual shift.

If decreasing operational readiness of nuclear weapons is reformed in this manner, several concrete steps become possible:

As part of the START follow-on negotiations,

Russia and the United States could examine how measures to reduce operational readiness can accompany the bilateral arms control process.

Both Russia and the United States could further strengthen controls against unauthorized action, takeover, and tampering; further increase the

capability of warning systems to discriminate real from imagined attacks; and enhance the survivability of their forces and their command and control systems.

Arrangements related to data exchange and ensuring a capability to destroy a "rogue" missile in flight could be multilateralized, at least

in terms of sharing data, to bring other declared nuclear weapon states into the process.

Multilateralization of institutions such as the Joint Data Exchange Center may also have collateral benefits in the area of space security.

The premise of maintaining

nuclear deterrence between Russia and the United States should not be considered immutable. A dialogue on legacy nuclear postures and doctrines in the Russia-U.S.context may trigger a broader dialogue among relevant states on reducing the salience of nuclear weapons, thus facilitating progress on disarmament and

nonproliferation. '

As we have seen, Operating status/operational readiness is not only a vital part of the road to nuclear disarmament. It is also an utterly vital interim measure to ensure that unforseen events, computer malfunction, false information, and human fallibility do not bring about

an utterly catastrophic outcome.

Lowering operating status fits with a number of other measures including no first use, revision of security policies to rely less on nuclear weapons, and so on. It is unfortunate that current policies in some countries seem to envisage a greater rather than a

decreased, readiness to use nuclear weapons. This is the opposite of the direction in which we need to travel. With the election of the Obama administration, we are now starting to see real discussion of ways to decrease the role of nuclear weapons in security policies - though getting the US's own nuclear posture review to do this is going to be

tough.

There is an urgent need for real movement on nuclear disarmament and nonproliferation. There have been warnings enough from the very highest quarters that progress is imperative.

Widespread support for the Operational Readiness resolution, most recently at 141-3, sends a powerful signal. The same could be said for 'Reducing Nuclear Dangers', but obtaining support across the board for that nonetheless worthy resolution seems to be much harder. The strongly supported stand-alone resolution on Operational

Readiness in 2007 and 2008 demonstrates a depth and breadth of support with the potential to stimulate positive action by the nuclear weapon states.

The need now is for the consensus demonstrated by this to be consolidated, and to be translated into action at the levels of the US Congress and Russian

Duma, and into executive action. The election of a new US President provides a possible window of opportunity. The decision by the six sponsoring governments of the operational readiness resolution to 'recess' the resolution in 2009 while the US sorts out its nuclear posture in turn provides that window for the US.

India, with its 'Reducing Nuclear Dangers' resolution has played a useful role in keeping operational readiness on the global agenda. The need now is for the six governments that sponsor operational readiness and India to collaborate in promoting measures that will do much to help ensure human

survival. These are the stakes for which the game is played.

Let us use the issue of operational readiness to move forward as per article VI to a nuclear - weapons - free world.