



SPEECH

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OPENING SPEECH BY MINISTER FOR DEFENCE DR NG ENG HEN AT THE DEFENCE TECHNOLOGY COMMUNITY'S 50TH ANNIVERSARY DINNER ON 7 NOV 16, MARINA BAY SANDS EXPO AND CONVENTION CENTRE ROSELLE-SIMPOR BALLROOM

President Tony Tan,
Emeritus Senior Minister,
Former Minister¹ and Second Minister for Defence²,
Permanent Secretaries and Chief of Defence Force,
Former Permanent Secretaries,
Distinguished guests, colleagues and friends,

Welcome to the DTC50 Dinner

1. First, a very good evening and welcome to tonight's dinner where we celebrate together the jubilee year of the Defence Technology Community, or DTC. I know all of you feel honoured as I do, because we have with us tonight President Tony Tan, Emeritus Senior Minister Goh Chok Tong, Dr Lee Boon Yang, Mr Lui Tuck Yew, previous Ministers for Defence; as well as previous Permanent Secretaries, among them Mr Lim Siong Guan and Mr Chiang Chie Foo, who oversaw the development of this community, the DTC. I look forward to President Tony Tan's speech wherein the achievements of the DTC will be recounted. We are all very proud of the achievements of the DTC, which give us an assurance of a secure future. These achievements were only possible because of the collective efforts of the entire MINDEF and the SAF family.

¹ Dr Lee Boon Yang

Individually each of you played a role in your unit, whether it was in the Army, Navy, or Airforce, Defence Science and Technology Agency (DSTA) or DSO, whether it was in technical vocations as well as combat, to make that extra effort to push our defence capabilities forward. Tonight, it is both somewhat formal, somewhat informal – it is a meeting of old friends. The formal part is to celebrate these collective achievements over the past 50 years and thank each of you for your individual contributions. More importantly, I think we can draw out lessons from each cohort here – there are a number of cohorts here. We are celebrating the 50th anniversary, but there are some who were not born 50 years ago. We want to draw lessons from each cohort because it helps to remind us that even if we move forward and face difficulties – surely there must be – that this is the spirit that will take Singapore and the Singapore Armed Forces (SAF) forward.

2. Let me start tonight at the beginning with our founding leaders. Much has been said and repeated on Singapore's immutable and inherent vulnerabilities that were recognised very early on – namely our lack of strategic depth and limited manpower. This is true, but perhaps less known is the fact that our founding Prime Minister Mr Lee Kuan Yew and Dr Goh Keng Swee, who was our first and longest-serving Minister for Defence for 14 years, believed that Singapore must and could be defended. Personally I never had the privilege to work with Dr Goh, but President Tony Tan and Emeritus Senior Minister Goh Chok Tong had. In our oral records, this starting point, that Singapore must and could be defended, was articulated by Dr Goh. It led to the next logical step that Singapore could only be defended in depth, that is, outside of our island. More pointedly, we needed to build up an SAF capable of doing so before the British withdrew their troops. Our founding leaders actually began the SAF thinking they had more time than it turned out, because when the British indicated that they were going to pull out, most people thought it would happen in 1975. As it turned out, the Brits accelerated their pull out from 1975 to 1971. We had six short years to build a military from scratch.

3. This logic, to defend Singapore in depth, dictated that the SAF, on top of having a capable army, needed to be able to protect our skies and seas; it meant that we needed an air force and integrated island air defence capability, as well as a credible navy. This was why, apart from the AMX-13 tanks acquired in 1968, 20 Hawker Hunters and 60 Bloodhound missiles were acquired in quick succession from the British that same year. The naval build-up was slower, as the threat assessment at sea then was deemed less onerous, but even so in 1968 the records show that our

² Mr Lui Tuck Yew

leaders had already decided that we should purchase patrol crafts and acquire Missile Gun Boats and minesweepers. The genesis of the DTC then can be traced to this original and bold vision at the inception of the SAF to have a tri-service military force. This was why it led to the formation of the Flying Training School as well as the Air, Electronic and Maritime Technical Training Schools, which were merged with the Army wing to form the SAF Technical Training Institute (SAFTECH) in 1969. These are the humble beginnings, the roots of the DTC which I hope you all will not forget. There are too many stories to tell of your various contributions in this collective journey. So the organising committee is compiling not one, not two, but four books in their commemorative book series, *“Engineering Singapore’s Defence – The Early Years”*. Two of these books will be launched later tonight by President Tony Tan.

4. All of us ought to remember that those bold and highly ambitious plans were conceived at our founding when Singapore’s per capita Gross Domestic Product (GDP) was about \$700 US dollars, equivalent to that of Sierra Leone and Rwanda today. We were an impoverished country facing an imminent pull-out of the British, which accounted for 20% of our GDP, and our leaders’ goal then was to build from scratch a tri-service SAF within a decade. It was unheard of and some might say impossible. Neither was it obvious that Singapore had any scientific wherewithal to recruit Defence Engineers and Technicians to support this build-up and maintenance of the tri-service SAF. I often wonder sometimes why Mr Lee and Dr Goh believed they could do it, because all of us know full well that Dr Goh was, prior to this (appointment as Defence Minister), was the Minister for Education. Remember again that our educational standards were not high by any stretch. The PSLE (Primary School Leaving Examination) passing percentage was 54%. These plans could have gone wrong, as has been the case for many other countries. Tonight, it would be most appropriate to say thanks, on behalf of all of us, to Mr Lee Kuan Yew, Dr Goh Keng Swee, the first Permanent Secretary of the Ministry of Interior and Defence Mr George Bogaars, the first Director of the General Staff of the SAF Mr Tan Teck Khim, and pioneers in the services and the DTC, such as Professor Lui Pao Chuen³. These were intrepid pioneers who dared to dream and beyond that took concrete steps to embark on what others might have considered a most unrealistic course.

5. The 1970s to 90s were exciting two decades for the DTC, and many of the principal actors are here with us tonight. Successive Ministers for Defence – Mr Howe Yoon Chong (1979-1982), Mr Goh Chok Tong (1982-1990), Dr Yeo Ning Hong (1991-1994), Dr Lee Boon Yang (1994-1995)

and President Tony Tan (1995-2003)⁴; Second Minister for Defence – current Prime Minister Mr Lee Hsien Loong (1987-1990); Permanent Secretaries – Mr Lim Siong Guan (1981-1994)⁵, Mr Philip Yeo (1979-1985)⁶ and Mr Teo Ming Kian (1991-1995)⁷. The DTC's leaders then included Director of the Defence Materiel Organisation – Er BG(Ret) Wesley D'Aranjo (1987-1991)⁸; and Directors of the Defence Science Organisation (DSO) – Dr Tay Eng Soon (1977-1980)⁹ and Professor Su Guanng (1986-1997)¹⁰. For the SAF, Chiefs of Defence Force – LG Winston Choo (1974-1992)¹¹ and LG Ng Jui Ping (1992-1995); and other Chiefs of Services – Deputy Chief of General Staff COL Manchanran Singh Gill (1982-1986)¹², Chief of Air Force BG Michael Teo (1980-1982; 1985-1992)¹³, and Chief of Navy RADM Kwek Siew Jin (1992-1996)¹⁴. The quest to climb Mt Everest was started by our founding generation and continued by successive good and capable leaders, but it also needed the support of all of you in your various units to make that ascent together. What was most impressive was the development of an indigenous research and development capability for electronic warfare and guided weapons and some notables during this period – the production of our first locally-designed howitzer gun, the FH-88s; the acquisition of a new generation of jet fighters, the F-16 Fighting Falcons and the E-2C early warning aircraft, and our first submarines, the Challenger-class submarines.

6. In the last two decades, the ascent to the peak has continued and technology-wise, today, we are regarded as having defence capabilities on par with developed countries. Our defence scientists and engineers collaborate with counterparts in the United States, Germany, France and many other countries. They work together on various state-of-the-art platforms such as the F-15SG multi-role fighter, the Leopard 2 main battle tanks, and the experimental unmanned mine

³ Prof Lui Pao Chuen later served as Director, Defence Materiel Organisation (1986) and Chief Defence Scientist (1986-2008), and was conferred the Defence Technology Medal (Outstanding Service) in 2015.

⁴ Dr Tony Tan was conferred the Defence Technology Medal (Pinnacle Award) in 2015.

⁵ Mr Lim Siong Guan was conferred the Defence Technology Medal (Distinguished Leadership) in 2015.

⁶ Mr Philip Yeo was conferred the Defence Technology Medal (Distinguished Leadership) in 2015.

⁷ Mr Teo Ming Kian was conferred the Defence Technology Medal (Distinguished Leadership) in 2015.

⁸ Er BG(Ret) Wesley D'Aranjo was conferred the Defence Technology Medal (Outstanding Service) in 2015.

⁹ Dr Tay Eng Soon was also one of the three pioneering members, and the Head, of the Electronics Test Centre (1972-1977).

¹⁰ Professor Su Guanng later served as Chief Executive, Defence Science & Technology Agency (2000-2002) and was conferred the Defence Technology Medal (Outstanding Service) in 2015.

¹¹ LG Winston Choo was Director General Staff (1974-1976), Chief of General Staff (1976-1990), and Chief of Defence Force (1990-1992), thus overseeing the SAF for most of the 1970s to 90s.

¹² COL Manchanran Singh Gill was Deputy Chief of General Staff when FH-88 development began in 1983.

¹³ BG Michael Teo was Chief of Air Force twice, from 1980-1982, then 1985-1990. The F-16A/Bs were acquired in 1983 and delivered in 1988.

countermeasure vessels, to name a few. We are on target to be the first Navy in the world to have a fully unmanned mine-hunting and clearance unit. We are now expanding capabilities in the cyber and intelligence domains.

7. The leaders of the DTC in this period, such as the Chief Executive of DSTA – Mr Richard Lim (2002-2007)¹⁵; and Chief Executive Officers of the DSO National Laboratories - Professor Quek Tong Boon (1998-2004)¹⁶ and Mr Quek Gim Pew (2004-2016)¹⁷ will remember the efforts in each of these projects. MINDEF was fortunate to have Permanent Secretaries who facilitated these efforts - like Mr Peter Ho (1995-2000; 2000-2004)¹⁸, Mr Chiang Chie Foo (2004-2013), and Mr Peter Ong (2001-2002) – because many of you who have worked in MINDEF, DSTA or DSO know that some projects take a long time to mature and there were some, a handful, who did not make the grade.

8. This journey of the DTC, has grown from humble beginnings to where it is today at the forefront of technological advancement and is an incredible story by the entire DTC and the SAF. Each member supporting the other, pushing one another forward, daring to dream, willing to take yet another seemingly arduous step, to get to where we are now. All of us collectively made a difference for Singapore. This journey from valley to mountain-top is on display at our SGDefence Exhibition, held at the Sands Expo and Convention Centre. I hope you and your friends had the opportunity to visit it.

“Dare to Think, Dare to Do”

9. What have we achieved? All of us can draw satisfaction that today, Singaporeans are no longer daunted, as before. They feel safe even though we are still a small nation with no strategic depth and limited manpower. Our warriors in defence technology have made up for these inherent short-comings to help build an SAF that is capable of keeping us safe and secure. Indeed, as we have often said, the DTC is the secret-edge weapon of the SAF.

¹⁴ RADM Kwek Siew Jin was the Chief of Navy who approved the acquisition of the Challenger-class submarines in 1995.

¹⁵ Mr Richard Lim previously served as Chief of Navy (1996-1999) during the launches of the first Challenger-class submarines.

¹⁶ Mr Quek Tong Boon previously served as Director, Defence Materiel Organisation (1994-1997).

¹⁷ Mr Quek Gim Pew is current Chief Defence Scientist.

¹⁸ Mr Peter Ho was PS(DD) (1995-2000) and PS(D) (2000-2004), and was conferred the Defence Technology Medal (Distinguished Leadership) in 2015.

10. No one can be sure what threats tomorrow may bring for Singapore that can threaten our well-being. But, if we continue to display tenacity amid despair, courage in the face of intimidation, and resolve when difficulties loom large, I believe that Singapore will prevail and that the SAF, fully supported by the DTC, will keep Singapore safe and secure for many generations to come.

11. I would like to conclude with a quote from Dr Goh Keng Swee which I hope will serve as the guiding star for the DTC. As Dr Goh Keng Swee said, “regard the present condition not as a pinnacle of achievement, but as a base from which to scale new heights.” I wish for the DTC many more mountains to conquer.

12. Congratulations and thank you.

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