2017
Quadrennial Defense Review
REPUBLIC OF CHINA

Contents

Minister's Foreword 4

Introduction 8

Chapter 1 Strategic Environment 13

Section 1 Asia-Pacific Security Environment 14

Section 2 Military Situation in the Taiwan Strait 17

Section 3 Defense and Security Challenges 25

Chapter 2 Strategic Guidance 29

Section 1 National Defense Strategy 30

Section 2 Military Strategy 38

Section 3 Development Strategy for Defense Industries 39

Chapter 3 Force Buildup 43

Section 1 Force Establishment Planning 44

Section 2 Force Integration 47

Section 3 Enhancing Weapons Acquisition 54

Section 4 Budgetary Planning 55

Chapter 4 National Defense Reform 59

Section 1 Enhancing our Recruitment System 60

Section 2 Optimizing Personnel Quality 62

Section 3 Enhancing the Image of Service Members 64

Section 4 Caring for Service Members 66

Section 5 Refining the Defense Legal System 68

Section 6 Simplifying Administrative Procedures 70

Chapter 5 Defense Industries 73

Section 1 Research and Development for Defense Technologies 74

Section 2 Developing and Producing Weapons Indigenously 75

Section 3 Development of Defense Industries 77

Chapter 6 Civil Protection Operations 81

Section 1 Executing Disaster Prevention and Relief 82

Section 2 Safeguarding Maritime Rights 83

Section 3 Supporting Emergency Rescue 85

Chapter 7 Cooperation with Partners 87

Section 1 Military Exchanges 88

Section 2 International Humanitarian Assistance 89

Section 3 International Cooperation on Anti-terrorism 90

Conclusion 92

Minister's Foreword

The Ministry of National Defense (MND), in compliance with Article 31 of the National Defense Act, releases the 2017 Quadrennial Defense Review (QDR), the third edition after the first one in 2009. This edition is aimed at materializing the President's concept of national defense as strategies and policies, and systemically illustrating the directions and perspectives of defense policy implementation for the next four years. It does not only satisfy the people's right to know but also help the international community to understand our defense policy and military strategy.

During the compiling process of the 2017 QDR, the strategic dynamic in the Asia-Pacific region may be shifting with the change of government and Asia-Pacific policy of the United States. Mainland China has been increasing its defense expenditures annually, speeding up its defense and military modernization, and dramatically strengthening its power projection capabilities. Its acts have raised concerns among neighboring countries. Especially, Mainland China’s recent intimidating moves by sending flotilla with aircraft carrier Liaoning and military aircraft passing though the Taiwan Strait have posed a serious threat to our national security.

Facing a complex regional strategic environment and multiple security challenges, the MND has stipulated five

fundamentally defensive strategic goals and corresponding approaches to achieve them, to safeguard our national security. Furthermore, guided by the military strategy of "resolute defense, multi-domain deterrence" the MND is shaping a military force capable of delivering deterrence and defense to keep the enemy at bay.

Additionally, the MND has adopted innovative thinking to simplify the process to acquire weapons and equipment that best meet the operational requirements. A new category of "specialists in defense affairs" in personnel system has been planned to extend the career tracks of service members. To realize the policy of "self-reliant defense," the MND is setting up a "defense technology development mechanism" to incorporate private sector capabilities into indigenous weapons development programs. Aerospace, shipbuilding, and information security are identified as the core of development to promote integration of our R&D in defense technologies and relevant industries, and to achieve the goal of "mutual support between defense industries and economic development."

In the next four years, the MND will actively reconstruct military barracks, upgrade individual combat gears, redesign military uniform and badges, and improve living facilities and

welfare. In addition, the MND will enhance the efficiency of disaster prevention and relief operations, strengthen the efforts in fishery escort missions, and protect the safety and properties of our people. Based on our own capacities and experience, the MND will also make efforts to participate in foreign humanitarian assistance and disaster relief (HA/DR) missions to fulfill our international obligations as a global citizen.

In closing, I wish to thank the members of the QDR consultation committee and the participating colleagues and staff for their full dedication and contribution, and look forward to the support and recommendations from the general public. The ROC Armed Forces always keep an open mind to different opinions, which can be good reference for future policy making and force buildup, and keep our military moving towards an elite and strong defense force.

Kent Feng
Minister of National Defense
March, 2017

Intentionally Blank

Introduction

The Ministry of National Defense (MND), in compliance with Article 31 of the National Defense Act, is required to submit a Quadrennial Defense Review (QDR) within ten months after each presidential inauguration. In addition to this introduction, the 2017 QDR consists of seven chapters: Strategic Environment, Strategic Guidance, Force

Buildup, National Defense Reform, Defense Industries, Civil Protection Operations, and Cooperation with partners, structured as the figure below.

Chapter 1 Strategic Environment

The United States and Mainland China continue to be the primary influences in the current Asia-Pacific strategic situation with a "co-opetition relationship" existing between the two powers. Unresolved territorial disputes over islands and waters in the East China Sea (ECS) and the South China Sea (SCS), instability on the Korean Peninsula, arms competition among East Asian countries, growing non-traditional security threats, and potential changes in U.S. Asia-Pacific policy are major factors shaping the strategic balance in the Asia-Pacific region, and present challenges to our national security.

Mainland China continues to invest heavily in military modernization, vigorously undertaking military force transformation and reforming into theater commands, and is gradually acquiring force projection capability west of the Second Island Chain, adding uncertainties to the security environment in the region. In recent years, our country has faced constrains in defense financial resources and manpower, difficulty in acquiring advanced weapons

systems, increasing threats to cyber security, decreasing defense awareness in the public, and increasing incidents of complex emergencies, all of which require a serious and careful response.

Chapter 2 Strategic Guidance

In order to counter the military threats and challenges to our national security, ensure our national survival and development, and safeguard our people's lives and properties, the Ministry of National Defense has developed five strategic goals: “Safeguard the Nation,” “Cultivate a Professional Military,” “Realize Defense Self-Reliance,” “Protect People's Wellbeing,” and “Strengthen Regional Stability,” along with approaches to achieve those goals. MND has adopted military strategic concepts of “resolute defense, multi-domain deterrence” to lead our direction of force buildup and establish a credible defense force. Additionally, the Ministry has established a “development strategy for defense industries” to develop advanced technologies, establish capacities to research and produce weapons systems and equipment indigenously, and spur the development of national defense capabilities and economic growth.

Chapter 3 Force BuildUp

With a focus on integrating joint operational capabilities, the ROC Armed Forces continues to improve its joint operational training, establish precise logistic capabilities, enact policy reforms for mobilizing reservists, and generate a warrior spirit in the force, in order to ensure successful accomplishment of defense missions for our nation. Moreover, the MND established force development priorities, and will achieve force development goals through effective integration, allocation, and employment of defense resources, and by revising weapons system acquisition processes.

Chapter 4 National Defense Reform

The MND is dedicated to all reform efforts, including perfecting its military recruitment system, optimizing personnel quality and enhancing the image of service members, caring for their wellbeing, refining the national defense legal system, and streamlining administrative functions, in order to enhance service members professionalism and organizational efficiency.

Chapter 5 Defense Industries

Envisioning future trends and requirements for joint operations, the MND has been pooling interagency

resources to push for indigenous development and production of weapon systems in three core fields of aerospace, shipbuilding and information security in order to promote integration of our R&D in defense technologies and relevant industries, and to achieve the goal of "mutual support between national defense and economic development."

Chapter 6 Civil Protection Operations

For improving efficiency of disaster relief operations and providing concerted assistance efforts, the MND has cooperated closely with the Coast Guard Administration (CGA) to protect our fishermen in our territorial waters. Furthermore, the MND will assign its naval and air assets to assist in emergency assistance and transport operations.

Chapter 7 Cooperation with Partners

Through military exchanges, international humanitarian assistance operations, and cooperation on anti-terrorism with our partners and friendly countries, the MND has taken part in bilateral and multilateral dialogue mechanisms for security and cooperation in order to contribute to peace and stability in the region.

Chapter 1
Strategic Environment

Quadrennial Defense Review
2017

The current global security environment is marked by complexities and uncertainties. Coupled with regional strategic security alliances and competitions among powers, regional situations have been facing increasing uncertainties. In particular, the Asia-Pacific strategy adopted by the new U.S. administration, foreign policies adopted by countries in the vicinity of the Taiwan Strait, political and economic arrangements of Mainland China and its rapid military development, and security issues we are facing – such as economic development, demographical structure, and composite disasters – all impact our national security and sustainable development.

Section 1 Asia-Pacific Security Environment

The security environment of the Asia-Pacific Region is marked by the coexistence of competition and cooperation. The direction of U.S. Asia-Pacific strategy and force deployment remains to be seen while the rise of China has a tremendous impact on the surrounding regions. Meanwhile, facing traditional and non-traditional security threats, such as strategic competition among regional powers, disputes of maritime rights, and proliferation of terrorism, the majority of Southeast Asian countries have begun to acquire advanced weapons and expand their security alliances in response. Challenges to our national security have emerged from these relevant developments.

I. Regional Strategic Posture

The U.S. has been maintaining military cooperation with traditional allies, such as Japan and South Korea, and has established strategic security cooperation relationships with Southeast Asian countries. Mainland China, on the other hand, has been vigorously strengthening security relations with Russia and Central Asian countries, expanding the scale and scope of its joint exercises, and increasing its leverage on regional affairs by touting grand political and economic strategies, such as the “Regional Comprehensive Economic

Partnership" (RCEP) and "One Belt, One Road" (OBOR). In addition, the situation in the Korean Peninsula is precarious. North Korea has persisted in test-firing ballistic missiles and conducting nuclear weapon tests, raising serious concerns internationally. Its actions have been triggering shifts in relations among involved countries such as the U.S., Japan, Russia, Mainland China, and have indirectly influenced the security situation in the Taiwan Strait.

In terms of regional cooperation, Asia-Pacific countries have been enhancing strategic dialogues through venues such as the Asia-Pacific Economic Cooperation (APEC) forum and East Asia Summit (EAS) to foster security and prosperity in the Asia-Pacific via these multilateral negotiations and cooperation.

II. Maritime and Island Disputes

The Asia-Pacific region contains numerous islands surrounded by abundant maritime resources. Several of those islands are embroiled in sovereignty disputes and controversial demarcation of economic waters. Regional states have been investing ever more resources to secure their respective interests and benefits.

In the East China Sea (ECS), following Japan's nationalization of the Diaoyutai Islands, Mainland China

announced an East China Sea Air Defense Identification Zone (ADIZ). It has since maintained regular naval and air patrols in the ECS. Mainland China has also conducted frequent training exercises in the West Pacific and beyond the First Island Chain. Japan has established a shore-based surveillance network on Yonaguni Island and increased troop levels on Ishigaki Island. The confrontational posture between Mainland China and Japan has heightened uncertainties in the security and stability in East Asia.

In the South China Sea (SCS), the findings of the international arbitration tribunal in the case filed by the Philippines were not commonly accepted by the claimants. Mainland China continues its island construction and militarization of those artificial islands. The U.S. advocates for "freedom of navigation and overflight" in the region. Developments in the region could escalate sovereign disputes and strategic competition, and potentially lead to regional conflicts.

III. Non-traditional Security Threats

Following rapid changes in globalization, technological advancement and information flow, non-traditional threats have become ever more complex. Their security implications and scope are increasing, as are their importance. Many challenges such as the proliferation of terrorist ideologies, incidence of complex emergencies, spread of contagious

diseases, cyber attacks, threats to information security, competition for energy resources, and rise of food and water resource crises, are all transnational and regional issues that cannot be resolved by a single country alone. Only through international and regional security cooperation mechanisms can these issues be properly managed to ensure regional security and stability.

Section 2 Military Situation in the Taiwan Strait

Dynamic military development, arms proliferation, and training exercises of regional countries impact the Asia-Pacific regional situation and pose challenges to security in the Taiwan Strait. Among them, Mainland China's obvious improvement in military operational capabilities by expediting military organizational reform and maintaining R&D on advanced arms and their conversions is the major factor that affects security in the Taiwan Strait.

I. Military Environment in the Vicinity of Taiwan

1. Rapid Growth of Mainland China's Force Projection Capabilities

According to its military strategy of “active defense” and guidance of military preparation of “winning local wars under informatized conditions,” Mainland China has been

increasingly developing its naval, air, and rocket forces, and vigorously refining their organizations, tactics, and operational methods, in order to enhance its joint operational capabilities. Moreover, its military strength has been growing rapidly in the Asia-Pacific region by extending its force projection and strategic strike capabilities through conducting cross-regional long-distance training, escort missions in the Gulf of Aden, and naval and air force exercises penetrating through the First Island Chain and in the SCS.

2. The U.S. Reviews Its Force Deployment in the Asia-Pacific

To maintain its interests and ability to swiftly respond to potential contingencies in the Asia-Pacific, the U.S. sustained its forward military presence in the region. Additionally, the U.S. military continues to modernize, strengthen its key capabilities for future operations, enhance its equipment and training, and conduct routine combined exercises with allies aimed at improving its joint capabilities, in order to maintain strategic advantage in the Asia-Pacific.

3. Japan Strengthens its Military Forces and Lifts Restrictions on Overseas Deployments

In line with its 2014 *National Security Strategy*, Japan lifted its ban on the "execution of collective defense." Japan also adopted legislation for peace and security, expanding the operational area of the Japan Self-Defense Forces. Furthermore, by adopting a new version of the "three principles on transfer of defense equipment and technology," Japan has been expediting R&D on advanced defense technologies and selling defense technology overseas. These changes profoundly influence the security situation in the Asia-Pacific and the Taiwan Strait.

4. Military Confrontation on the Korean Peninsula

North Korea has continued its strategy of brinkmanship, and has carried out nuclear tests and missile test launches in order to increase its international bargaining leverage. In response to the military threats from the north, the Republic of Korea has been enhancing its alliance with the U.S., deploying the Terminal High Altitude Area Defense (THAAD) system, improving intelligence and command and control systems, extending radar detection range, and enhancing its early warning and defense capabilities. But these activities have triggered

objections from Mainland China and Russia, created a more complicated military confrontational posture on the Korean Peninsula and increased uncertainties in the regional security environment.

5. Arms Upgrades among Southeast Asian Countries

Southeast Asian countries have been investing resources in accelerating their military modernization actively acquiring advanced weapons from the U.S., Europe, Russia, and Mainland China to improve their operational capabilities. The risk of military confrontations in the region has persisted.

II. Current Military Threats in the Taiwan Strait

Mainland China has never renounced its use of force against Taiwan, and preparing to conduct a military invasion of Taiwan is one of its primary goals. With a budget increasing year by year, the PLA has rapidly modernized its military equipment, pursuing military reform under the principle of "Central Military Committee (CMC) managing overall military affairs, theater commands focusing on warfighting, and services focusing on force-building." Relevant efforts have been made to reorganize its CMC general departments, restructure military regions (MR) into theater commands,

create an army headquarters in the People's Liberation Army (PLA), and establish a strategic support force and rocket force. In addition, the PLA in recent years has institutionalized all its military exercises. The PLA now possesses the capability to impose a blockade on Taiwan and conduct multi-dimensional operations to seize our offshore islands. The comprehensive operational capabilities it has developed pose threats to Taiwan including the following:

1. **Joint Intelligence, Surveillance and Reconnaissance Capabilities**

   The PLA has been developing capabilities of command, control, communications, intelligence, surveillance, reconnaissance, navigation, targeting, and digital datalink capabilities, and can now cover areas west of the Second Island Chain. With a focus on improving surveillance and identification capabilities on targets in the Asia-Pacific in support a range of military operations in the region, posing a tremendous threat to our national security.

2. **Strike Capabilities of the PLA Rocket Force**

   All medium (and short) range tactical ballistic and cruise missiles deployed by the PLA Rocket Force can reach the entire main island of Taiwan. With continuous

improvements on maneuverability, accuracy, and lethality, they can be used to conduct precision strikes on our political, military, and economic high-value targets (HVT). Moreover, it has accelerated R&D, production, and deployment of long-range anti-ship ballistic missiles to enhance its capabilities to invade Taiwan and deny the intervention of foreign forces.

3. Integrated Air Operational Capabilities

The PLA Air Force has been accelerating R&D and conversion programs for its fighter fleet. Its main operational aircraft have undertaken aerial refueling drills, and multiple types of its aircraft have flown across the First Island Chain, demonstrating a significant improvement in its long range operational capabilities. Moreover, coupled with new unmanned combat aerial vehicles (UCAV) and advanced long-range precision munitions, it has acquired capabilities to achieve multi-layered firepower, joint air defense, anti-missile operations, and even achieve air supremacy west of the First Island Chain, while further threatening our efforts to obtain regional air superiority.

4. Integrated Maritime Operational Capabilities

The PLA Navy has been developing its main combatant ships and accelerating deployment of auxiliary ships, such as new amphibious transport docks and fast combat support ships, to enhance its replenishment capabilities for maritime operations. In addition, its submarine-launched intercontinental ballistic missiles onboard its nuclear submarine and shore-based supersonic anti-ship missiles under development and deployment have strengthened its strategic deterrence and counterattack capabilities. With the assistance of its indigenous aircraft carrier and capability to form a blue water carrier battle group, the PLA Navy has demonstrated that it has increased capability to conduct nuclear counterstrike, deny access of foreign forces, and blockade Taiwan and its surrounding waters.

5. Integrated Ground Operational Capabilities

The PLA Ground Force has been developing in the direction of three-dimensional operations, rapid maneuverability, long-range power projection, precision strike, and special operations capabilities. The army aviation units are equipped with various types of indigenous helicopters, and have increased training

with special operations forces in order to improve its air-land battle, rapid assault, and air assault operations capabilities. Furthermore, it has deployed transport vessels along Mainland China's southeastern coast and conducted joint landing drills to fulfill its future operational requirements against Taiwan. It is believed Mainland China has acquired the capability to initiate triphibious landing operations to seize our offshore islands.

6. Strategic Support Capabilities

The PLA Strategic Support Force was formed to integrate space, technical reconnaissance, cyber warfare, electronic countermeasures, and psychological operations units. Notably, the world's first Chinese-made quantum communications satellite, which can transmit classified military operational data, was successfully launched into orbit. Its electronic countermeasures force can simulate a realistic electronic operations environment in the Taiwan Strait, and construct electronic interfering and paralyzing capabilities. In addition, it has absorbed civilian resources and recruited information warfare talent to expand civil-military integration. Thus, it has established a cyberattack capability to collect our electro-magnetic parameters, and to monitor, cut off, and interfere with our surveillance,

reconnaissance, command and control systems.

7. Unconventional Logistical Support Capabilities

In order to overcome inadequate transport capabilities and ensure the prioritization of military operations, all transportation infrastructure such as roads, railroads, waterways, air routes, and civilian transportation means were constructed to meet the PLA's defense needs. In recent years, the PLA has requisitioned civil airliners and large ferries to join its exercises, and mobilized large units by train. All these reveal that its unconventional support capabilities have been dramatically enhanced. In an invasion of Taiwan, it can accelerate the movement of troops and reduce our preparation time for defensive operations.

Section 3 Defense and Security Challenges

In maintaining national security and conducting defense preparation, not only do the threats and challenges in our external strategic environment have to be evaluated and dealt with, but social, economic, demographic, resources, technological, and psychological factors in our domestic environment have to be given serious consideration.

I. Limited Growth of Defense Financial Resources

In the wake of the 2008 financial crisis, global economic growth has suffered greatly. The economic development of our country has also been affected by this recession, and our overall finances have been constrained—limiting the growth of our defense spending. The major issue at present is to make the best of limited defense resources to strengthen comprehensive military capabilities and ensure sustainable force buildup and operational readiness. We will seek to obtain a reasonable and adequate defense budget appropriate to national budget allocations and, allocate and manage these resources appropriately.

II. Constrained Manpower Resources

The impact of our social and economic environment, along with a low birth rate, has been to reduce available manpower, negatively impacting our troop replenishment and operational strength. We will to continue to revise our recruitment system, and concurrently review our operational concepts and corresponding force structure in order to maintain a small but elite military to meet our future defense needs.

III. Difficulty in Acquisition and R&D for Advanced Weapons

In the face of the military threats from Mainland China, the ROC Armed Forces need to acquire advanced weapons to meet our defense needs. Bounded by diplomatic and

financial realities, our country faces difficulties in acquiring advanced weapons which cannot be produced domestically. Although we are capable of developing some defense articles, we cannot fully build sophisticated weapons and equipment on our own. Some key components and parts must be purchased from foreign sources. To adapt to the future high-tech operational environment, we must map out a long-term, comprehensive technology development strategy and establish indigenous R&D and production capabilities.

IV. Serious Threats to Cyber Security

With the continuously expanding development and application of information technologies, risks to cyberspace and information security are growing relentlessly. Government agencies, corporate enterprises, and critical infrastructures are potential cyber attack targets. In particular, the PLA has drastically increased its information and electronic warfare, and cyber operations capabilities, threatening our military and civilian networks. The ROC Armed Forces have to enhance information security and protection mechanisms, strengthen information, communications, and electronic warfare (ICE) capabilities, and help construct a comprehensive national cyber and electronic-magnetic security protection mechanism.

V. Waning Defense Awareness

Due to ongoing economic, social, and cultural exchanges across the Taiwan Strait, many of our fellow citizens have gradually lost awareness that the two sides of the Strait remain military adversaries, and that the risk of war still exists. Some have ignored the widening gap of military capabilities and increasing menaces from Mainland China, undermining their support for defense affairs. The ROC Armed Forces have to systematically integrate all relevant resources to raise defense awareness among the general public as well as encourage public participation in and support for defense affairs in order to strengthen national security.

VI. Increasing Threats from Complex Emergencies

Climate change has caused a rising number of complex emergencies with natural disaster conditions increasingly urgent and severe. Requiring coordinated interagency relief and recovery efforts. Our country is located within the western Pacific typhoon zone and Pacific Ring of Fire seismic zone, and is categorized as a highly hazardous area with frequent typhoons and earthquakes. In recent years, the ROC Armed Forces have effectively supported HA/DR operations. In the future, the Armed Forces will continue to cooperate with central and local governments to provide disaster relief assistance, and shoulder the responsibility of safeguarding people's lives and properties.

Chapter 2
Strategic Guidance

Quadrennial Defense Review 2017

In response to hostile threats and challenges to our national security, as well as to fulfill the need to ensure the survival and development of the nation and protect the lives and property of our people, the MND has formulated a "national defense strategy, military strategy, and defense industrial development strategy" to guide our defense policy implementation and force development. Through the implementation of those strategies, MND can best combine both opportunities and advantages, apply limited defense resources to build a credible defense force, and achieve its strategic goals.

Section 1 National Defense Strategy

In keeping with the President's national security concept and the Executive Yuan's defense policy guidance, the MND has evaluated the domestic and foreign strategic environment and trends, reviewed the status of threats and challenges to our national security, established defense strategic goals and laid out visionary approaches to achieve them. The strategic defense goals and approaches are driving the ROC Armed Forces to consolidate their defense preparations, develop future joint operational capabilities and enact relevant defense reforms to create a robust and strong defense force capable of enuring our national security.

I. Objectives of the National Defense Strategy

In light of current and future strategic environment and security challenges, we must think innovatively, promote pragmatic reform and utilize resources effectively in order to formulate the optimal plan for force buildup and operational readiness. Our current national defense strategy is as follows:

1. Safeguard National Security

The first priority of our national defense is to deter and defend against any hostile military action. In the particular case of a military invasion, we will mobilize all defense assets to safeguard territorial integrity and

sovereignty and protect the people and their property from devastation.

2. Cultivate a Professional Military

The employment of operational capabilities relies on highly professional personnel and efficient organizations. Facing dynamic changes in domestic and external environments, and the need to build a military force with high-tech and innovative capabilities, we must pragmatically carry out various refinement and reforms on the defense programs to improve overall personnel quality and organizational efficiency, and develop professional, smart, and strong Armed Forces to meet future challenges.

3. Implement Defense Self-Reliance

The development of defense requires the full support of a nation's economy. We must use the national economy to develop defense, and use defense to spur the economy, thus laying a solid foundation for a defense self-reliance. The ROC Armed Forces must combine resources from relevant government agencies and industrial capacities from private sectors to strengthen the development and application of defense technologies, and conduct research and produce weapons and equipment domestically.

Doing so achieves a win-win result, fulfilling the nation's defense needs while generating economic gains.

4. Protecting the Well-being of the People

To contend with the non-traditional security threats that have emerged in recent years, the ROC Armed Forces must serve on the frontline in conducting disaster relief and promoting social stability. The nation's maritime rights are also our important interests vital to its people's well-being, and the ROC Armed Forces must continue to implement government policies to safeguard the nation's maritime rights.

5. Strengthen Regional Stability

In the age of globalization, national security is intertwined with international politics and regional affairs, and cannot be managed unilaterally. Aside from building a robust defense force to meet self-defense goals, the ROC Armed Forces must be a “staunch peacekeeper” in the international community, dedicating themselves to strengthening peace and stability in the Taiwan Strait and security in the Asia-Pacific.

II. Approaches to Achieve the Objectives

MND will achieve its defense strategic goals through substantive policy planning and viable implementation

efforts, and by seeking adequate budgeting. The approaches to achieve objectives are as follows:

1. Strengthen Force Buildup

In order to achieve the strategic goals of "safeguarding national security," the ROC Armed Forces must develop necessary capabilities to accomplish all their missions. The pragmatic actions are as follows:

(1) Carefully review defense needs and pragmatically plan force buildup in order to establish comprehensive force development objectives.

(2) Build a defense force that deters military threats and denies invasions by consolidating joint capabilities, improving joint operations training, establishing precise logistics, refining the reserve system, and strengthening morale for all its personnel.

(3) Fine-tune the weapons acquisition processes to accelerate the procurement of necessary weapons and equipment for defense.

(4) Pragmatically allocate and apply limited defense financial resources to support force planning and buildup, and create reasonable and appropriate plan for the defense budget to maximize the effectiveness of all resources.

2. Promote Defense Reform

In order to reach the strategic objective of "cultivating a professional military," promote a series of defense affairs reforms. Practical measures are as follows:

(1) Design a comprehensive career package from recruitment to retirement to steadily achieve goals for a volunteer force.

(2) Improve the professionalism of military and civil personnel and refine manpower management and deployment mechanisms to cultivate and retain talented personnel who will continue serving the nation.

(3) Promote a culture of integrity and honesty to uphold military discipline, shape a highly esteemed image for service members, elevate their social status, and regain their honor and respect from the people.

(4) Plan for the care and welfare of personnel to ensure they have no worries about their families and can focus on their missions.

(5) Refine the national defense legal system to improve legal literacy for service members, and realize the goal of administration by law. A specific

act for the rights of service members is being studied and drafted to protect their legal rights and interests.

(6) Streamline administrative functions to improve the efficiency of implementation.

3. Develop Defense Industries

To achieve the strategic goals of "realizing a self-reliant defense," the MND must combine governmental resources with those of private sector to improve the capacities of defense industries. The pragmatic actions are as follows:

(1) Complete a layout of short, medium, and long term defense technology development to integrate domestic resources and capacities in industrial, academic, and research sectors in order to improve our capabilities of technological R&D.

(2) We are enhancing future-oriented studies on defense technologies and developments in weapons systems, and increasing self-reliant capacities in key technologies, to gradually achieve the goals of developing and producing weapon systems domestically.

(3) Develop defense industries with a focus on aerospace, shipbuilding, and information security, and enhance

their development through cooperation with industrial sectors and academia, incorporating R&D results and managing the process through security clearance mechanisms.

4. Enhance Civilian Protection Operations

In order to achieve the stategic goals of "protecting the well-being of the people" the ROC Armed Forces must enhance their capabilities to conduct military operations other than war. The pragmatic actions are as follows:

(1) Improve the disaster prevention and relief capabilities of the ROC Armed Forces and strengthen coordination and communication with governments at all levels in order to effectively support disaster prevention and relief operations.

(2) Secure our sea lines of communication (SLOC), maritime transportation activities, missions to escort our fishing vessels, and maritime surveys by employing our naval and air forces to maintain our maritime rights and interests.

(3) Provide medical evacuation and emergency transportation in special contingencies.

5. Expand Cooperation with Partners

In order to achieve the strategic goals of "promoting regional stability," the ROC Armed Forces will vigorously expand military exchanges and security cooperation with our partners. The pragmatic actions are as follows:

(1) Following comprehensive diplomatic policies of the government, the ROC Armed Forces have been promoting international cooperation and enhancing multilateral understanding and international cooperation through strategic dialogues, military cooperation, and think tank exchanges.

(2) The ROC Armed Forces have participated in international HA/DR operations and expanded relevant exchanges, sharing disaster relief experiences and dedicating efforts to preserve peace and share international responsibilities.

(3) The ROC Armed Forces have been strengthening their support to anti-terrorism rapid reaction capabilities and improving exchanges and cooperation on anti-terrorism with international community in order to maintain regional security.

Section 2 Military Strategy

Following the guidance of the ROC National Defense Strategy, the ROC Military Strategy will defend against threats to our national security. We will develop joint capabilities to ensure our ability to conduct resolute defense. We will create advantageous defensive postures through the concept of all-out defense. Meanwhile, we will implement measures to achieve multi-domain deterrence to increase strategic endurance and protect the homeland.

I. Secure territory with resolute defense

To support a posture of resolute defense, we continue to enhance ICE and operational C2 capabilities, secure critical/information infrastructure, and improve force preservation efficiency so as to enhance joint countermeasures and defensive combat capabilities. All-out defense strength and the natural buffer of the Taiwan Strait will also be exploited to achieve multi-layered defense and support sustainable operations to achieve strategic endurance.

II. Multi-domain deterrence by joint capabilities

To achieve resolute defense through multi-domain deterrence, we are adopting innovative / asymmetric means and developing joint capabilities to present multiple dilemmas

to the enemy and deter aggression. When enemy aggressions persist, our guiding principle is to "resist the enemy on the other shore, attack the enemy on the sea, destroy the enemy in the littoral area, and annihilate the enemy on the beachhead," and impose multiple interdictions and joint fire strikes to degrade enemy capabilities, disrupt its offensive and prevent the enemy from landing.

Section 3 Development Strategy for Defense Industries

The development of defense industries is focused on the three core fields of aerospace, shipbuilding, and information security. We are expanding defense needs, incorporating capacities in the private sector supervised by a technology management mechanism and pursuing solid fundamental studies to upgrade our defense technology, push for developing indigenous weapon systems and their lifecycle support with critical and advanced technologies, and lead the development of relevant industries, with the purpose of attaining "mutual support between national defense and economic development."

I. Guidance for Development Strategy for Defense Industries

1. Envisioning trends in defense technologies and following our joint operational requirements, we will complete a thorough planning for defense technologies to ensure our R&D programs matching with our operational requirements.
2. We will invest in the three core fields of aerospace, shipbuilding, and information security in order to reinvigorate the defense industries and generate energies for our economic growth.
3. We will establish a defense technology development mechanism to incorporate multiple high-tech capacities from industries, academic and research communities to develop advanced defense technologies.
4. We will seek breakthroughs in key military technologies, and establish self-reliant capacities from design to production and with integrated logistic support, in order to gradually achieve the goal of total indigenous production of weapon systems.
5. We will hold out the prospect of upgraded industrial design or manufacturing capacities to incentivize and attract contractors to participate in defense industries. Their connections with international market will assist them in upgrading and transforming themselves. Additionally, part of

the budget shall be earmarked for associated programs and outsourcing shall be considered to create a win-win result for national defense and relevant industries.

6. Bills for development of defense industries are to be proposed to encourage and finance domestic industries to join R&D in defense technologies, so as to improve the technical capacities of defense industries.
7. We will improve interagency coordination and cooperation mechanisms to help transfer defense technologies to defense industries and generate add-on results for them.
8. We will establish a security control mechanism for defense contractors to prevent theft or improper transfer of research results of key defense technologies.

II. Planning for Development Strategy for Defense Industries

1. Aerospace Industries

Beginning with the new indigenous Advanced Trainer Jet program, we continue to engage in R&D on various aerial vehicles and develop key aerospace technologies. The matured technologies will be transferred to the private sector in order to step-by-step establish an optimal supply-chain in aerospace industries and bolster their overall development.

2. Shipbuilding Industries

Applying our current expertise on shipbuilding, we continue to build naval vessels indigenously and elevate our self-production rate of shipborne equipment through domestic R&D efforts and verification processes. Moreover, key technologies in building advanced vessels will be deeply rooted in shipbuilding industries, the industrial capacities will be upgraded through the experiences and lessons learned during the shipbuilding process.

3. Information Security Industries

We continue to push for R&D on information security technologies of a new generation and assist in setting up a strategic alliance with information security industries. Teaming up with the government to establish national information security test and training facilities, we continue to strengthen cooperation with industries, academic and research sectors to help the information security industries to upgrade and transform.

Chapter 3
Force Buildup

Quadrennial Defense Review
2017

Defense establishment is centered on force buildup and preparation, which incorporate elements of tangible and intangible strengths, such as force scale, personnel quality, weapons and equipment, resolve against the enemy and logistical support capacities. Facing potential threats, the ROC Armed Forces carefully assess necessary capabilities, and make plans for force buildup requirements and priorities. Furthermore, we carefully review the weapon acquisition process and make the best of our military expenditures to support our force development in order to reach goals outlined in our National Defense Strategy and Military Strategy.

Section 1 Force Establishment Planning

Envisioning changes in the regional security environment, potential hostile threats, and availability of defense resources and requirements, the MND has formulated the following major items of force development in order to establish necessary defense capabilities and deal with possible military confrontations and non-traditional security challenges.

I. Establish Superior Next Generation Capabilities

1. The ROC Armed Forces have been strengthening information, communications and electronic warfare capabilities, such as offensive and defensive information and electronic warfare, and protection of critical infrastructures. Civilian information security expertise will be enlisted as a force multiplier.
2. The ROC Armed Forces have been planning to acquire new fighters capable of vertical or short takeoff and landing (V/STOL) and having stealth characteristics. Moreover, we have activated upgrade programs for our main operational vessels, strengthening air-defense missile capabilities, and enhancing our long-distance strike firepower and rapid reaction capabilities on the ground in order to maintain fundamental capabilities of defense operations.
3. The ROC Armed Forces have been pursuing domestically-produced submarines and constructing asymmetric assets,

such as high speed stealth vessels, shore-based mobile missiles, rapid mining and minesweeping measures, anti-paratroops means, and unmanned aerial systems, in order to create multi-layer and multi-dimension defensive and protection networks.

4. In order to improve "force preservation" of our assets, minimize damages in wartime, and exert joint operational effectiveness to conduct a sustainable defense, we have been enhancing concealment and camouflage for military installations, strengthening hardened aircraft shelters and rapid repair capacities, and fine-tuning C4ISR and relevant backup systems, in order to establish a highly survivable military force.
5. We have created disaster reporting, emergency rescue, and medical care capacities in order to enhance our professional HA/DR capabilities.

II. Refine Force Structure

1. After reviewing organizational development trends of major militaries in the world, we continue to develop an optimal force structure and scale for operational effectiveness in the direction of forming a military force with "organizational flexibility, flattened command and control, full jointness across services."

2. In accordance with designated missions, functions, and flow of operations, we continue to refine the structures of our organization and forces in order to improve efficiencies and maintain a lean and strong defense organization.
3. We have adopted integrated command and control mechanisms for our air defense with a single chain of command that is more responsive to threats.
4. We are integrating manpower from all our information, communications, electronic warfare, and information security domains to improve our ICE capabilities.
5. We have adjusted the organizational structure of the armament production system to improve R&D on key defense technologies and indigenous production capacities for weapons and equipment.

III. R&D Investment Driven by Operational Requirements

The MND continues to invest in upgrades for our missile and radar systems, and use advanced technologies, such as cloud computing, microminiaturization, to advance R&D programs such as anti-jamming, unmanned stealth vehicles, precision strike munitions.

IV. Increase Effectiveness of Resources Application

In order to support force buildup, defense transformation, and military modernization, the ROC Armed Forces have

developed a comprehensive plan to phase out all their obsolete equipment to alleviate logistical burdens. We have also planned to apply automation to replace manpower in order to cut personnel costs. Furthermore, we have carefully calculated our financial requirements for foreign military sales, and decreased the amount of funds remitted to foreign countries for such sales. We have reinvigorated relevant industries via our defense needs, and created a benign interaction between our defense and economy, in order to maximize the effectiveness of all resources.

Section 2 Force Integration

Facing changes in regional security environment, development of military technologies, defense needs, and available budget, the ROC Armed Forces have been integrating available hardware and software resources, such as integrating joint capabilities, refining joint operational training and logistical capabilities, revising mobilization policies, and boosting their morale, in order to gradually transform themselves into elite joint forces capable of long distance precision operations and synchronized joint engagement.

I. Integrate Highly Effective Joint Capabilities

1. Enhance Joint Operational Command Mechanism

The ROC Armed Forces have completed a joint operational command mechanism that features "simplified command of deploying forces," "flattened command hierarchy," and "acceleration of command tempo." We have combined realignment of organizations with the corresponding acquisitions of weapon and equipment, and effectively integrate C4ISR assets with all weapon platforms, in order to establish a battle management system that can achieve jointness and increase effectiveness of joint operational command and control, and exert our comprehensive military power.

2. Improve Joint ISR Capability

We have been integrating our major command and control as well as ISR systems, developing capabilities of employing satellites, enhancing the performance of our ISR assets, and expanding channels to exchange information, in order to achieve the goal of "sharing information, and expediting command and control."

3. Improve Effectiveness of Contingency Response

We have been applying joint ISR measures to monitor activities in our adjacent waters and airspace, and by

following "The ROC Armed Forces Regulations on Peacetime Contingencies Response" guiding all the services to initiate contingency reaction procedures. Furthermore, through local coordination with law enforcement, coast guard and civil defense units, we can maintain the security of critical infrastructures and important installations.

II. Enhance Effectiveness of Joint Operational Training

1. Introducing Fundamentals of Joint Operations

Through basic and advanced courses for officers and non-commissioned officers as well as specific scheduled training courses for joint operations, we have been introducing fundamental functions of joint operations to all our cadre members.

2. Strengthen Joint Operational Training

According to "The ROC Armed Forces Defense Operational Concept" and "The ROC Armed Forces Joint Operational Guidance," we have been carefully planning and conducting joint operational exercises with all services. In order to improve exchanges among services, we have increased responsibilities for our Theaters of Operations to conduct operational readiness mission

training so as to establish their understanding of joint operations.

3. Enhance Training and Doctrine for Joint Operations

In accordance with rearrangement of force structure and upgrades of weapons and equipment, we have revised the *ROC Armed Forces Joint Operations Guidelines* and doctrines for joint operations at all levels are undergoing necessary revisions to promulgate standard guidance for the respective functions.

4. Improve Joint Operational Training System

Our joint operational training has three levels: basic joint operational training, service operational training and exercise, and military-wide joint operational training. The Joint Operational Training System and Action Items of Joint Operations are applied to accumulate training results at all levels, in order to closely combine training, exercise, and operational preparation together to further enhance the effectiveness of joint operational training.

III. Establish Precise Logistic Capabilities

1. Integrate Maintenance Capacities

Our maintenance resources and capabilities of all special and general military equipment are integrated and we

have created a common logistics information sharing platform across services for the purpose of saving maintenance costs through technical exchanges, personnel training, and informatization. In addition, maintenance and support capacities are also enhanced to improve readiness of military equipment and operational forces.

2. Enhance Effectiveness of Logistics Information Management

We have established a common operational platform to integrate maintenance capacities and supplies of military outfits. The development of the Logistics Management System for Deploying Forces is underway, and all the logistical data of the ROC Armed Forces are being integrated to simplify workflow and achieve the goal of providing convenient and swift logistical support.

IV. Revise Reservists Mobilization Policy

1. Promote Short-term Enlistment

After reviewing overall situation of our country, we are promoting a policy for reservists to voluntarily serve short-term in active duty. Priority will be granted to reservists having high-demand military occupational specialties (MOS), technical skills and combat skill. They will be provided with reorientation courses so they

can be quickly mobilized and combat ready in wartime.

2. Establish Reservist Units of Retired Volunteer Service Members

In order to improve the reserve combat capabilities, former volunteer service members will have priority for service in reserve forces. We will tap into their skilled MOSs and combat skills to enhance the strike, mobile, and command and control capabilities of current reserve forces which will be combined with regular forces in defense operations for our country.

3. Introduce Mobilization Information System

We are planning to set up a personnel mobilization messaging system with upgraded materiel management functions in order to disseminate recall messages in a timely manner through information means and quickly assemble our reservist forces.

V. Generate Comprehensive Intangible Combat Capabilities

1. Raise Awareness of All-out Defense

In accordance with the *All-out Defense Education Act*, we have been instilling patriotic awareness to the general public through institutional education, on-the-job training sessions offered by governmental agencies,

and educational sessions provided by local societies. In addition, we have been hosting recall training sessions for reservists, and disaster relief (Min'an) drills and air raid (Wan'an) drills to improve public awareness of All-Out Defense and patriotism so as to strengthen their recognition and support for defense affairs.

2. Solidify Will to Fight

Through patriotic education, political warfare training, resisting-stress training, and mental health education, we have been improving the mental status of service members. A mental status database was established to provide information on necessary psychological treatment and prevention measures for service members in operations so as to eliminate their fears in combat and solidify their will to fight.

3. Strengthen Counter-espionage Operations

In order to counter infiltration and espionage activities from Mainland China and effectively prevent any information leakage, we have been hosting counter-espionage seminars and training sessions, strengthening protection for classified programs, and enhancing security awareness among service members and their dependents.

4. Improve Strategic Communication Mechanism

We are following the features of modern warfare and trends in information dissemination, and tactfully using media to enhance our strategic communication mechanism. Furthermore, we are attentive to focal issues in society, and combine them with our elaborations on policies, in order to win the support and trust from the people.

Section 3 Enhancing Weapons Acquisition

The ROC Armed Forces have been applying innovative concepts to revise the weapon acquisition process and effectively integrate, allocate, and apply defense resources, in order to achieve the goals of force buildup. The weapon acquisition strategy is prioritized towards indigenous production, and when procuring from foreign sources is considered, relevant technology transfer shall be realized in order to maximize the effectiveness of the defense budget and achieve the goals of our force buildup.

I. Improve Management for Defense Investment Programs

To refine the efficiency and quality of military investment programs, and acquire optimal weapons to meet our operational requirements and demands for cost-effectiveness,

the ROC Armed Forces have been combining weapon acquisition processes, carefully reviewing all documents, and applying professional personnel with more flexibility in operations, in order to make well-rounded programs for weapon acquisition, and achieve our goals of force buildup and a self-reliant defense.

II. Realize Cost-effectiveness Review on Defense Resources

The ROC Armed Forces have been using scientific and quantifiable means, such as modulated simulation system and models of cost-effectiveness analysis, to construct a mechanism for analyzing the efficiency of our joint operations and their cost-effectiveness. By doing so, our goal is to find an optimal combination of capabilities which can satisfy our requirements for joint operations and limited defense resources, and the results will guide our force buildup.

Section 4 Budgetary Planning

Considering multiple factors of overall national economic development, financial burdens of the government, national security, and current hostile threats and national defense policy, we continue to strive for a higher defense budget and properly allocate the acquired amount. In addition, we are using various financial tools and management methods to cut

expenditures in order to maximize the effectiveness of our defense resources.

I. Pragmatically Strive for Defense Budget Increase

The scale of the defense budget is vital to the force buildup for the ROC Armed Forces, whose modernization is highly dependent on a stable growing defense budget. We will continue to pragmatically strive for higher defense budget in accordance with our defense needs in order to effectively implement our defense policies.

II. Reasonably Allocate Defense Resources

Within the acquired budget, we will adequately and reasonably allocate defense financial resources. Priority of financing will placed on the following defense policy categories: defense R&D, indigenous production capacities for weapons and equipment, acquisition of advanced weapon systems, maintaining availability of major operational assets, and improving living facilities for service members.

III. Strict Budgetary Implementation Oversight

By establishing a budgetary management and control mechanism, restructuring budgetary process, conducting on-site inspection tours, and doing statistical analyses, we may improve our budgetary oversight efforts, cut expenses,

strengthen internal auditing, and maximize the effectiveness of our defense budget.

IV. Integrate Special Funds on Defense

All special funds will be managed by enterprise management methods and will be mutually supportive to each other with the defense budget. In other words, the special funds and the defense budget will be financially interoperable in order to fulfill the budgetary needs of force buildup.

Intentionally Blank

Chapter 4
National Defense Reform

Quadrennial Defense Review 2017

Contemplating future development in defense affairs, the MND has to continue refining itself and make progress in line with advances over time. Therefore, the MND is dedicated to all reform activities, in order to lead the ROC Armed Forces to a new era by making sound policy planning and realistic implementation, and strengthening administrative efficiency.

Section 1 Enhancing our Recruitment System

In order to achieve the goals of recruitment, the ROC Armed Forces have been improving recruiting efforts by enhancing forces training, providing well-rounded care to dependents, realizing career plans for service members after retirement, offering complete supporting measures for recruitment and policy incentives to enhance personnel quality and organizational efficiency and create an elite defense force.

I. Recruitment Management in Transition to Volunteer System

Under the current recruitment system, regular forces are mainly composed of volunteer service members, who will be the backbone for shouldering responsibilities to conduct defense and operational preparation missions. Conscripts undergo four months of military training to learn basic combat and MOS skills and will be listed in the pool of reservists once the training is completed. They can be recalled to receive reorientation training in peacetime, and will be mobilized to join the order of battle with regular forces to safeguard the nation.

II. Complete Supporting Measures for Volunteer System

In order to steadily recruit personnel and retain them to preserve military professions and strengthen combat readiness

for our forces, we have been maintaining a complete set of supporting measures for recruitment. We have been hosting All-Out Defense Education Sessions, Military Summer Camp activities, and Military Career Track meetings, refining recruiting advertisements, and revising selecting processes in order to recruit highly qualified personnel. In addition, we have increased combined training for key capabilities and realistic training, in order to strengthen the capabilities of our forces. Furthermore, we have been reviewing our military pay and renovating military installations and living quarters to offer service member more impetus to stay in the service and care for their dependents. Service members are also encouraged to pursue advanced studies, and acquire skill certificates off duty, in order to cultivate their secondary specialties other than their primary MOS, and help them join the work force after retirement.

III. Improve Career Planning for Veterans

The Veterans Affairs Council (VAC) has completed a retiree assistance program, which provides categorized assistance and consultation services to retirees according to their individual MOS and rank. The areas of assistance include: schooling, career training, discounted cost medical treatment and home care. In addition, the MND will discuss career planning programs for retiring members with the VAC and the

Ministry of Labor to create better conditions for job-seeking retiring members.

Section 2 Optimizing Personnel Quality

Abiding by the principle of "educated for purposes, and nurtured by plans," the MND has been instilling professionalism in its entire military and civilian members, and fine-tuning its personnel management mechanism in order to retain talented personnel. In addition, we have been conducting exchanges between our military educational institutions and those of friendly countries in order to cultivate elite members and increase the quality and effectiveness of defense policy implementation.

I. Strengthen Military Professionalism

Envisioning the trends in defense transformation, aside from improving its military educational system, the MND has established the Graduate Institute of Chinese Military Affairs Studies and Leadership Excellence Course, while also planning to set up a PhD course for Strategic Security and Defense Management to nurture more talented personnel in military strategies.

II. Enhance Defense Civilian Personnel System

We are adopting measures for civilian personnel such as deepening on-the-job defense education, expanding participation in military affairs, improving personnel exchanges and establishing a career path system for civilian officials in order to construct a well-designed defense civilian personnel system.

III. Introduce "Specialists in Defense Affairs"

Referencing the "defense civilian personnel" system in foreign countries, former service members can be employed to serve as civilian "specialists in defense affairs," in order to extend their career track by this means of flexible manpower management, enable them to contribute their military expertise over a longer period.

IV. Exchanges between Military and Civilian Educational Institutions

The MND has been expanding academic exchanges among foreign and domestic universities, our service academies and National Defense University to instill in our trainees more innovative and skillful thinking through studying together and absorbing multidisciplinary ideas. During winter and summer breaks, selected cadets can join exchange activities in foreign countries to broaden their international perspectives.

Section 3 Enhancing the Image of Service Members

Aside from focusing on operational and training missions, the ROC Armed Forces shall join hands with society, and utilize diverse publicity channels to cultivate martial virtues among our service members. In addition, interaction between military and civil society will be strengthened, and the ROC Armed Forces will show their dedication, professionalism, and ironclad discipline to win the respect and trust from the people.

I. Winning Respect and Honor

By nurturing military disciplines and virtues, all service members will be imbued with the energetic spirit of "sacrifice, unity, and responsibility," and have firm dedication to fighting for our national survival and the people's wellbeing. The MND has been cooperating with the media to portray a professional image for the ROC Armed Forces so as to win the recognition and trust from the people.

II. Increase Interaction between Military and Civilian Communities

The MND has set up communication and coordination channels with local governments and legislative institutions

and designated areas of responsibilities for civil affairs to integrate local resources and create a sound interaction mechanism between military and civilian circles. We have also been promoting community work to care for people in need in order to exhibit the ROC Armed Forces' tradition of embracing the people wholeheartedly.

III. Firmly Stringent Military Discipline

The MND has been improving its culture of leadership, using justifiable means of maintaining discipline, and maintaining highly accessible communication channels in order to create a harmonious working environment. In addition, we have incorporated the use of mobile internet devices to distribute timely reminders of discipline demands in order to improve our duplicate oversight mechanism on and off duty and uphold a high standard of military discipline.

IV. Foster a Clean and Honest Culture

The MND will participate in Transparency International's Government Defense Anti-Corruption Index (GDAI) in order to exhibit our results in anti-corruption and transparent policy implementation and increase dialogue and cooperation with public civil groups, all of which can assist us in evaluating risks to our clean and honest culture.

Section 4 Caring for Service Members

In order to provide a well-rounded care for active members and their families, the ROC Armed Forces have been offering a variety of benefits and caring measures concerning their living quarters, environment, clothing, gear, food, and other factors. In this way, their worries of livelihood can be alleviated, and they can be more focused on their duties in dedication to the nation.

I. Refurbish Military Barracks and Living Quarters

After considerations of integral planning, accumulated budget, focal investment, and exertion of operational capabilities, the MND has been reconstructing large scale and congregated military installations, and constructing multi-service facilities for administration, leisure activities, and housing. Moreover, we have been effectively using financial resources to expand the portion of budget for construction in order to expedite the progress of renovations for old living quarters and improve military members' quality of life.

II. Improve Quality of Life and Environment

The MND strives to improve quality of life and environment for service members. The acquired budget will be allocated according to the level of urgency in areas such as security, water leaks and overall living environment, and the priority

of locations, such as units on mountainous or rural areas, and units on offshore islands.

III. Introduce New Personal Combat Gear

In accordance with actual production capacities and earmarked budget for new personal protective gear, the MND has been acquiring funding for improving battle protection for service members. The sequence of renewal phases is as follows: combat forces, combat-support forces, then service-support forces.

IV. Improve Quality of Military Uniforms

After considering characteristics of individual service and respective mission requirements, and international military uniforms acts and costs, the MND has been combining resources from domestic garment industries to research and improve our military outfits and their qualities, emphasizing on showcasing glorious military traditions and recognition of unity. In addition, we have set up military clothing supply stations and issued prepaid cards to provide more convenient ways to meet the needs of service members.

V. Review and Improve Disaster Relief Gear

After reviewing recent experiences in HA/DR operations and relevant mission demands, the MND has been gradually

renewing, in accordance with our operational requirements, personal gear for our disaster relief personnel. We have been redesigning specialized outfits, and researching new field rations for them to cope with difficulties in those missions and ensure their safety.

VI. Upgrade Food Supplies and Services

The MND has adopted flexible ways to purchase food supplies and increased outsourcing for them in order to improve the quality of meals for service members. We have also expanded the range of our non-staple food supplies to alleviate the burdens of food preparations at all levels. In addition, we have offered more convenient food and daily supplies to provide higher quality services for our personnel.

Section 5 Refining the Defense Legal System

In order to implement a legal system for defense affairs following the principle of "Legal System First," the MND has been drafting a specific protection act for service members along with rules of engagement for the ROC Armed Forces, and has established a reporting mechanism with judicial agencies concerning active service members involved in legal cases. In addition, the services of judge advocates will be flexibly applied so as to strengthen the effectiveness of "administration by law."

I. Stipulate Specific Protection Act for Service Members

Referencing to the *Public Officials Protection Act*, the MND has been drafting a system of remedies for rights of service members to guarantee the protection of service members' rights.

II. Construct Comprehensive Legal Systems

The MND has been drafting rules of engagement for the ROC Armed Forces which meets the standards of international laws and our national conditions. This act will link our military and political goals through law, and establish a legal modus operandi for our operations and command in armed conflicts.

III. Establish Civil-Military Judiciary Liaison Mechanism

After revising the *Code of Court Martial Procedures*, legal cases involving active service members are submitted to governmental judicial organizations. In order to allow them to recognize the unique nature of military service and management, the MND has been drafting a reporting mechanism for those cases to maintain a smooth channel to liaise with one another. Furthermore, the MND has been planning to establish exchanges between our judge advocates and judicial officials to share case handling experiences.

IV. Improve Legal Awareness of Service Members

The MND has revised "Court Martial Education" to "Legal Education," focusing on concepts of human rights and "administration by law." In addition, we have flexibly assigned our judge advocates to impart legal knowledge with real case examples to improve legal awareness and law abiding attitudes in our personnel.

Section 6 Simplifying Administrative Procedures

Envisioning future trends of development for defense organizations, the MND has been employing information technologies and modern management concepts to simplify administrative functions at all levels in order to improve the flow of operations and enhance the quality and effectiveness of policy implementation in defense affairs.

I. Streamline Administrative Works

After reviewing the status of current organization, division of labor, general functions, and non-operational related missions and activities, the MND has been streamlining administrative works according to the principle of "being horizontally combined and vertically integrated with distinctive authorities and accountabilities," in order to improve our organizational efficiency.

II. Improve Operational Procedures

The MND has been using performance evaluation methods and tools and employing workforce inventory to review current flow of administrative operations, in order to "simplify the process, shorten the time-span, decrease repetitions, and save costs."

Intentionally Blank

Chapter 5
Defense Industries

Quadrennial Defense Review
2017

Developing defense industries is a major means to consolidate national resources and fulfill the goals set forth by Article 22 of the *National Defense Act* for Self-reliant Defense. Envisioning future trends and requirements of joint operations, the MND has been planning R&D for defense technologies, establishing management mechanisms, consolidating resources from governmental agencies, and promoting indigenously-developed weapon systems. Furthermore, we have been focusing our defense technological R&D in three core fields of aerospace, shipbuilding, and information security. Integration of these fields with relevant industries will support our force buildup and achieve the goal of "mutual support between national defense and economic development."

Section 1 Research and Development for Defense Technologies

Envisioning trends in technologies and requirements of future joint operations, the MND has been strengthening fundamental studies, and striving for breakthroughs in hard-earned key technologies in order to increase the capacities of defense technologies.

I. Envisioning Requirements of Defense Technologies

Following the requirements of future joint operations, we have stipulated R&D policy goals and core fields for defense technologies in order to meet our operational demands, guide our R&D programs in a forward-looking and sustainable manner, and ensure our technological superiority in these core fields.

II. Strengthen Fundamental Research

The MND has been outsourcing forward-looking, potential-driven and research-worthy programs to civilian academic or scientific research institutions through academic cooperation. The MND has also established a control, evaluation, and application mechanism for those programs, in order to strengthen our foundation in technological development.

III. Formulate Technology Developmental Mechanism

To expedite development of defense technologies and application of the R&D results, we are going to establish a specific unit in charge to pool resources together to focus on the prospective of "developing innovative technologies, accelerating their defense applications, and ratcheting up industrial development" in order to leverage technical capacities in the private sector to develop advanced technologies.

Section 2 Developing and Producing Weapons Indigenously

The goal of a self-reliant defense is to domestically develop and produce weapons. We have to master technical capacities in R&D, design, manufacture, testing, and integrated logistical support to gradually lift indigenous capabilities. The MND has carefully evaluated its technical levels and R&D risks and designated budget resources to shorten the gaps in its technical capacities for technical breakthroughs. This is in order to lay a sound and solid foundation to domestically develop and produce weapons and equipment.

I. Evaluate Levels of Technical Capacities

In order to reduce risks in R&D, the MND has been evaluating and making and inventory of necessary key technologies and requirements for system development and locating alternative sources to fill gaps in capacities.

II. Seek Breakthroughs in Key Technologies

The MND has been investing in R&D in key technologies it currently lacks in order to develop and produce future weapon systems, enhance the feasibility of developing and producing such weapon systems, lower risks in developing them, and meet military application needs.

III. Realize Domestic Development and Production of Weapons

According to the requirements in defense and force buildup, the MND has planned an advanced and comprehensive path for developing and producing weapons, incentivizing contractors to join defense industries. With programs of indigenous aircraft and vessels, we have been improving our domestic capacities in R&D, design, manufacture, test, and integrated logistical support.

Section 3 Development of Defense Industries

We have been using defense needs to promote development in defense industries, transferring results of matured defense technologies into their hands, and incorporate capacities in the private sector to advance themselves. Aerospace, shipbuilding, and information security are prioritized as three core industries to develop in this regard. We are using policy incentives and substantive ways to upgrade defense industries, expand their scale of business, and generate economic revenues and potential growth for them.

I. Develop Three Core Industries: Aerospace, Shipbuilding, and Information Security

Focusing on three core industries of aerospace, shipbuilding, and information security, the MND has been combining resources from governmental agencies and industrial capacities in the private sector, in order to promote the development of defense industries. In the future, the MND will continue to earmark portions of the budget for relevant programs and outsource some of its requirements in order to effectively combine capacities in civilian industries, support the development of defense industries and realize a self-reliant defense and reinvigoration of defense industries.

II. Promote Cooperation with Industrial and Academic Sectors to Improve Quality

Through cooperation with industries and academia, the MND will offer training for inspection personnel in defense industries, and will establish criteria and mechanisms of inspection for defense industries and a standardized system of defense products, in order to achieve the goals of defense industrialization. In addition, the MND will promote innovative management for defense industries, quality control and risk management, project management, and products inspection capacities, while assisting domestic industries to improve their development and production capabilities to shorten the R&D time span for defense products.

III. Upgrade Industries with R&D Achievements

We have been expanding civil participation in defense industries through various mechanisms, such as outsourcing military articles, releasing military resources, developing dual-use technologies, etc., aiming at transferring our capacities of defense R&D into civilian applications. The profits of R&D shall be invested in defense technologies.

IV. Assist in Certification for Exports

The MND plans to engage in verification, classification, and integration of domestic contractors concerning their reputation, financial status, manpower, facilities, technical expertise, and management. Furthermore, the MND will establish criteria of qualification for development, manufacture, and maintenance, set up standards of acceptance for end products, and will provide assistance for domestic contractors to acquire foreign original certification or military specification certification. This will increase their international competitiveness, expand their overseas markets, and promote the development of defense industries.

V. Promote Industrial Development through Interagency Cooperation

Through cooperation with the Ministry of Economic Affairs and Ministry of Technology, the MND has been promoting policies of producing indigenous aircraft and vessels, doing research on aerial, maritime, and underwater unmanned vehicles, and creating a two-way mechanism and an operational platform for "the military transferring (technologies) to the industries, which provide feedback to the military," in order to transform capacities of defense technologies and generate more interest in defense industries.

VI. Establish Security Clearance Mechanism for Defense Contractors

The MND has been establishing a security clearance mechanism to implement strict contractual specification and control of classified information, in accordance with security clearance levels of contractors involved in defense acquisition and procurement programs. This is to prevent theft or improper transfer of research results of key defense technologies and increase opportunities of international cooperation and acquisition of advanced technologies.

Chapter 6
Civil Protection Operations

Quadrennial Defense Review
2017

In order to maintain the safety of our people's lives and property and ensure our maritime rights, the ROC Armed Forces continue to enhance the efficiency of HA/DR efforts as well as provide required assistance. The ROC Armed Forces cooperate with the CGA closely to protect our fishing rights and secure our SLOCs. In addition, we will deploy naval and aerial assets to assist in emergency rescue (transport) operations.

Section 1 Executing Disaster Prevention and Relief

Taiwan is frequently devastated by typhoons, torrential rains, and earthquakes. Following their legal obligation to assist in disaster prevention and relief operations, the ROC Armed Forces need to assign subordinate units, which can be dually deployed in HA/DR operations, in support of local governments and employed to conduct relevant combat missions.

I. Integrate HA/DR Resources

When a disaster strikes, an "Emergency Operations Center" is established by authorities in charge of HA/DR operations and the MND to integrate all relief resources from governmental agencies to conduct HA/DR operations.

II. Forward Force Deployment

In peacetime, the MND monitors hazardous potentials in the affected region and organizes relief resources. Once the alarm is triggered, we adhere to the principle of "HA/DR is equivalent to operations" and the direction of "forward deployment, preposition of forces, and timely prevention and rescue," to complete all disaster prevention preparedness. When an unexpected disaster strikes, the MND continues to command all forces to assist local governments which have the lead in disaster relief operations.

III. Refine Coordination Mechanism

The MND has established coordination and communication channels with related governmental agencies and local governments to conduct disaster prevention drills before the annual flooding season so as to enhance the tempo of cooperation in disaster relief efforts, and overall efficiencies of our national disaster prevention and relief efforts.

IV. Joint HA/DR Exercises

The MND has been conducting HA/DR drills with the Executive Yuan and local governments to sharpen our disaster prevention practices. In addition, we have been participating in international humanitarian assistance programs to observe relevant drills, exchange experiences, and accumulate HA/DR experiences in order to multiply our capacities in disaster prevention.

Section 2 Safeguarding Maritime Rights

Taiwan is surrounded by water, and the vast ocean is the important lifeline to our national survival. One of the priorities of the ROC Armed Forces is to maintain sovereignty over our islands and rights in our territorial waters and exclusive economic zones (EEZ) and secure our SLOCs. The MND continues to follow the government policy guidance of

"shelving territorial disputes and sharing resources through joint development" while abiding by the spirit of international law, and joins hands with all governmental agencies to safeguard our maritime rights. In addition, we have been strengthening the defense on Taiping Island and patrolling over its adjacent waters to demonstrate our determination to maintain our territorial sovereignty.

I. Maintain Navigation Safety

The MND has integrated ISR capabilities to closely monitor activities of aircraft and vessels in the vicinity of our country, and improved early warning capabilities. We have planned to assign assets of our navy, coast guard and air force to conduct routine joint exercises. Furthermore, our capabilities in blue water command and control, long-range mobile operations, escort missions, and maritime contingency response are also strengthened.

II. Protect Fishery Rights

According to the government policy of "navy escorting coast guard, which protects legally operating fishing vessels and their crews," the MND has been assigning naval and aerial assets, joined by CGA vessels to escort our national fishing vessels in our EEZs, in order to demonstrate our capabilities and determination in maintaining our fishing rights and sovereignty.

III. Assist in Oceanic Survey

The MND has been utilizing naval assets in collecting atmospheric data (barometric pressure, wind field, temperature, and precipitation), maritime data (depth, coastline, and tide) and underwater data (oceanic current, salinity, temperature, and marine geology) environments in designated waters, and establishing capabilities to draw charts of territorial waters. In addition, we have been assisting in governmental scientific research activities and establishment of basic database on our adjacent waters.

Section 3 Supporting Emergency Rescue

According to the *Manual of Operations for the National Rescue Command Center of the Executive Yuan and* the *Regulations of Rescue Operations of the ROC Armed Forces*, we have been providing various assets, including resources from military medical service, to assist in emergency rescue/ medical efforts with premise that no operational missions are affected. In addition, we have been improving relevant professional training and equipment so as to enhance our comprehensive rescue capabilities.

I. Enhance Overall Rescue Capacities

The MND has revised the *Regulations of Rescue Operations of the ROC Armed Forces* based on experiences from past rescue operations and the features of new equipment. We have been combining our rescue resources with those of governmental and civilian institutions, and improving their cooperation by sharing our practical experiences in order to ensure the success of various rescue missions.

II. Provide Disaster Medical Support

The MND has integrated medical forces with local medical assets and enhanced exchange and cooperation with public and private hospitals for the purpose of forming a regular pool of medical resources for disaster relief. When a disaster strikes, they can be mobilized instantly to devastated areas to assist in medical care and evacuation for victims, and ensure the success of emergency medical missions.

III. Support Emergency Transportation for Offshore Islands

On the condition of no influence to our operational missions, the MND, based on the spirit of "being empathetic with the people in need," coordinates with the Ministry of Transportation to timely assign military transport planes or vessels to assist in contingent transport missions for offshore islands and exhibit ROC Armed Forces' tradition of embracing the people wholeheartedly.

Chapter 7
Cooperation with Partners

Quadrennial Defense Review
2017

International cooperation is necessary to provide solutions to transnational issues, such as threats of terrorism, potential conflicts in the region, and major natural disasters. The MND has been conducting military exchanges with friendly countries and partners, international humanitarian assistance activities, anti-terrorism cooperation, and dialogue mechanisms for bilateral and multilateral security and cooperation to maintain security in the Taiwan Strait and strengthen regional peace and stability.

Section 1 Military Exchanges

Following the government's comprehensive diplomatic policies, we have been promoting military exchanges and cooperation with our partners and friendly countries. On a reciprocal basis, by military diplomatic exchanges and cooperation, we are hoping to deepen the relations and solidify the friendship with them, participate in international cooperation activities, and ultimately maintain the peace and stability in the Taiwan Strait and the Asia-Pacific.

I. Security Dialogues and Military Exchanges

We continue to push for establishing a regular security dialogue and communication mechanism with partners and friendly countries. We are hoping to absorb new concepts to expand our visions for force buildup and strengthening our operational capabilities through exchange activities, such as information sharing, training opportunities, R&D cooperation, information security, anti-terrorism, HA/DR, seminars or workshops on military subjects.

II. Exchanges with Defense Think Tanks

We have established interactions with foreign influential think tanks as Track Two platforms of exchanges and expanded contact and dialogue with international strategic research communities. By so doing, we are showing our strong

willingness to play a role in activities concerning regional security and shoulder more responsibilities in maintaining the peace and stability in the Asia-Pacific in order to win the support to our national security from the international community.

Section 2 International Humanitarian Assistance

Facing non-traditional threats, such as major natural disasters, the MND has been promoting exchanges and cooperation on international humanitarian assistance and sharing the disaster relief capabilities and experiences of the ROC Armed Forces.

I. Integrate Military HA/DR Capacities

Abiding by the national policies, the MND has continually enhanced HA/DR capacities to foreign countries, and is ready to assign naval and aerial assets to assist in transporting HA/DR personnel and materials.

II. Conduct International HA/DR Operations

Following the guidance of government policies, the MND has been striving to join relevant international humanitarian assistance organizations in order to establish HA/DR related mechanism and procedures.

III. Expand Exchanges on International Humanitarian Assistance

By taking part in relevant activities hosted by international non-governmental organizations, the MND is able to share its experience in HA/DR operations. Counterparts from friendly countries and partners have been invited to observe our HA/DR drills, aiming to establish a cooperation model for international HA/DR operations.

Section 3 International Cooperation on Anti-terrorism

The ROC Armed Forces have been improving overall anti-terrorism and counter contingency capabilities by enhancing professional training, acquiring new equipment, and strengthening international exchanges and cooperation in order to maintain our homeland security.

I. Improve Training on Anti-terrorism Capabilities

The anti-terrorism capabilities of the Special Service Units of the ROC Armed Forces have been improved by absorbing real combat experiences through anti-terrorism training provided by partners and friendly nations. We continue to set up a variety of simulated training grounds with realistic scenarios to sharpen the capabilities of our units in rapid response, counter contingency, and anti-terrorism.

II. Strengthening Exchanges and Cooperation on Anti-terrorism

By participating in the annual conference of International Special Operations Forces, the ROC Armed Forces can absorb anti-terrorism experiences from participating countries. Furthermore, a task force for exchanges on special operations has been activated to promote regional anti-terrorism (special operations) exchanges and cooperation.

Conclusion

In accordance with the President's vision and concept of national defense, the MND publishes the QDR to lay out a policy implementation blueprint for national defense to guide its commitment towards strengthening the military's capacities to defend the nation and maintain regional peace and stability.

Due to Mainland China's refusal to renounce the use of force against Taiwan, the grave difficulties in the Taiwan Strait have persisted. The ROC government stands firm in Taiwan, and its robust defense capability remains the pillar of the people’s self-esteem and national security. Mainland China's increasing military threats, as displayed by recent exercises in which PLA aircraft and vessels circled Taiwan, have once again revealed the paramount importance of the ROC Armed Forces’ role in “holding the shields and arms to safeguard the nation.”

Facing the challenges of uncertain situations and elevated threat levels, the MND hopes to generate, through the 2017 QDR, discussions on strategic and policy issues, review the status of defense policy implementation and force buildup planning, and establish a linkage among all military strategic documents. Beginning with an analysis of our

strategic environment, the 2017 QDR clearly maps out the goals of our national defense strategy and in corresponding chapters elaborates approaches and means to achieve them. In addition, this edition has highlighted important goals in our defense affairs, such as strengthening ICE capabilities, improving weapons acquisition, enhancing the image of service members, and developing defense industries.

The completion of the 2017 QDR marks the start of a series of efforts to refine our national defense reform. In the future, through our strategic guidance and integrated planning, continued defense investment, thorough defense preparations and force planning, and strict oversight, we will devote our utmost efforts to realize the goals presented in this edition

The development of the ROC Armed Forces is closely intertwined with the freedom and prosperity of our nation, and the people's support is our motivation to continue forging ahead. The MND will spare no efforts, acting with determination and complete dedication to shape the ROC Armed Forces as an elite military force. MND will steadfastly reform in order to sustain a peaceful and secure environment for the sustainable development of our nation and the people's livelihood.

National Library Cataloging in Publication (CIP) Information

2017 Quadrennial Defense Review/Ministry of National Defense,
Republic of China, Quadrennial Defense Review Editing Committee
--First Edition--Taipei City：Ministry of National Defense, March 2017
pages； cm.--
ISBN：978-986-05-2059-0 (Paperback)
1. National Defense 2.Republic of China

2017 Quadrennial Defense Review Editing Committee

Chairperson：	Kent Feng				
Deputy Chairperson：					
Chiu, Kuo-Cheng	Lee, Hsi-Min	Cheng, Te-Mei	Wu, Wan-Chiao		
Consulting Team：					
Ding, Arthur	Wang, Kao-Cheng	Lin, Ying-Yu	Hu, Chen-Pu	Wong, Ming-Shien	Chen, Han-Hua
Huang, Alexander	Yang, Nien-Tsu	Tung, Li-Wen	Liu, Hsiang-Bin	Tsai, Ming-Yen	Yen, Tieh-Lin
Su, Tzu-Yun	Lan, Ning-Li	(Names arrange to number of stroke in Chinese surname)			
Editing Team Advisors：					
Pu, Tse-Chun	Po, Hong-huei	Liu, Shou-Jen	Wen, Chen-Kuo	Mei, Chia-Shu	Chen, Kuo-Shen
Wu, Yi-Chang	Wu, Pao-Kun	Chen, Eng-Chi	Lin, Chun-Mei	Yen, Chen-Kuo	Han, Gang-Ming
Huang, Hsi-Ju	Liu, Jen-Yuan	Lin, Shu-Mei	Hsu, Jyh-Yun	Hsu, Heng-Pu	Chang, Yan-Ting
Chiang, Chen-Chung	Hu, Chan-Hao	Li, Ting-Sheng	Mo, Yu-Ming		
Editing Team：					
Hsu, Chao-Ming	Chou, Chin-Lung	Wang, Kou-Chiang	Wan, Wen-Cho	Ko, Yung-Sen	Yo, Yu-Tang
Shi, Chi-Liang	Hsu, Wen-Jen	Hsu, Ching-Yao	Chung, Chiang-Ping	Shen, Tien-Hao	Wang, Shi-Hua
Miao, Hui-Fen	Tseng, To-Ying	Chang, Chi-Wei	Wang, Chia-Shiang	Wu, Deng-Cing	Liao, Mei-Yu
Hu, Meng-Lin	Tien, Chia-Chi	Chuang, Chao-Chu	Yen, Hsu-Kuang	Liao, Cheng-Chih	Che, Pan-Feng
Chen, Ying-Li	Chen, San-Yung	Liu, Kuo-Feng	Tang, Hui-Chu	Lin, Chien-Chi	Huang, Ming- Cheh
Chang, Han-Cheng	Meng, Chun-Hsen	Lin, Han-Tsun	Chen, Wen-Liang	Yang, Tzong-Shing	Hsieh, Kai-Ti
Chang,Chin-Wen					
Visual Design：	Ko, Li-Yen	Chang, Cheng-Ya			

Book Title：2017 Quadrennial Defense Review
Author：Quadrennial Defense Review Editing Committee, Ministry of National Defense
Publisher：Ministry of National Defense
Contact Address：No. 409 Bei-an Rd, Taipei City 10104 R.O.C.(Taiwan) (Taipei P.O. Box 91197)
Web Site：www.mnd.gov.tw **Tel**：02-85099312 **Fax**：02-8509-9310
Distributors：
GOVbooks：1F, No. 209 Songjiang Rd., Taipei City,104 R.O.C.(Taiwan) Tel：02-25180207
Wu Nan Cultural Enterprise:
No. 6, Zongshan Rd., Taichung City,400 R.O.C.(Taiwan) (Main Office) Tel：04-22260330
No. 160, Sec 4, Roosevelt Rd., Taipei City, 100 R.O.C.(Taiwan) (NTU Store) Tel：02-23683380
Publisher：401st plant, Materiel Production Center, Armaments Bureau, Ministry of National Defense
Publishing Date：March 2017 (First Edition)
Version：First Edition
Price：Paperback NTD $160
GPN：1010600365 (Paperback)
ISBN：978-986-05-2059-0 (Paperback)
All rights reserved. Reprints without permission will be prosecuted