



**China Aerospace Studies Institute
Commander's Toolkit for China**

**Strategic Directions:
Taiwan**



ROC Doctrinal Modernization

- 2017 Attempt at Implementing Asymmetric Strategy
 - Force buildup
 - Asymmetrical capabilities
 - Concealable, dispersible, and maintainable
- Organizational Inertia
 - Preference for offensive strike to deter
 - Acquisition of limited number of high end systems





ROC Capabilities: ROC Combat Aircraft

Aircraft	Initial Number
F-16	~141
F-CK-1	130
Mirage 2000-5 EI	48
F-5	46 (retiring)





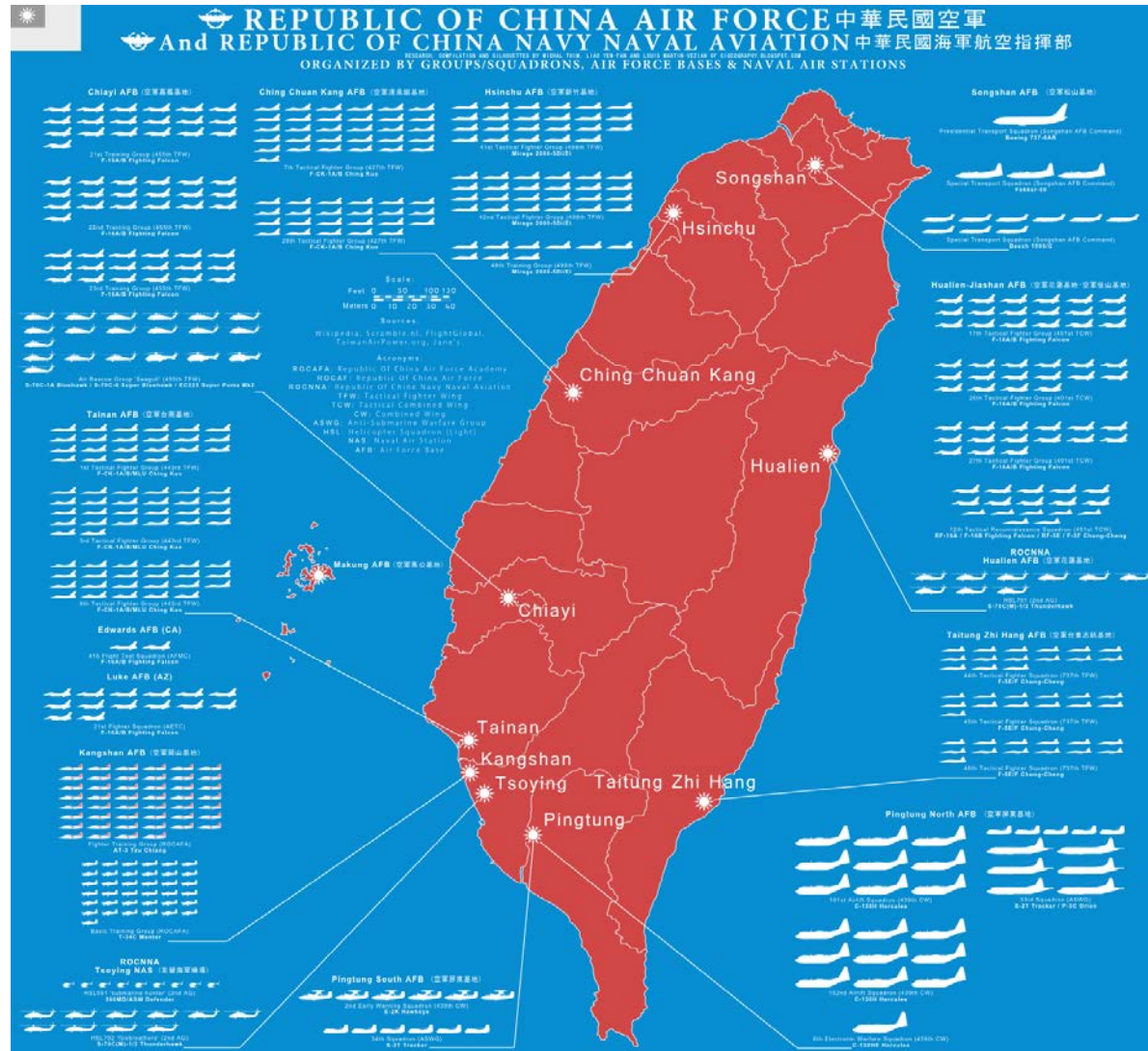
ROC AF: AEW, ASW, EW, and Airlift



Aircraft	Initial Number
E-2C/D	6
P-3	6-12
C-130	~20

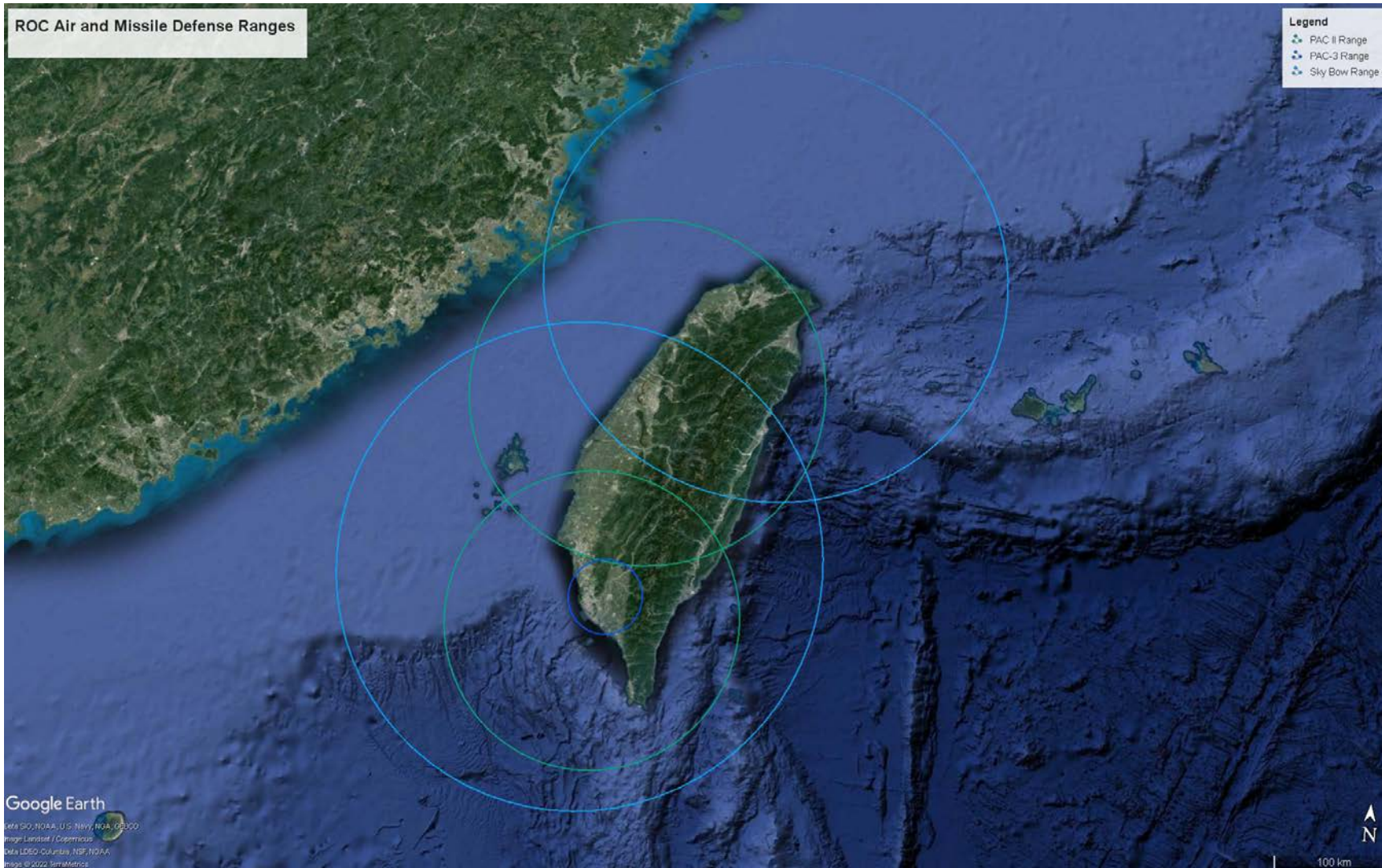


ROC Aircraft Basing





ROC Air Defense



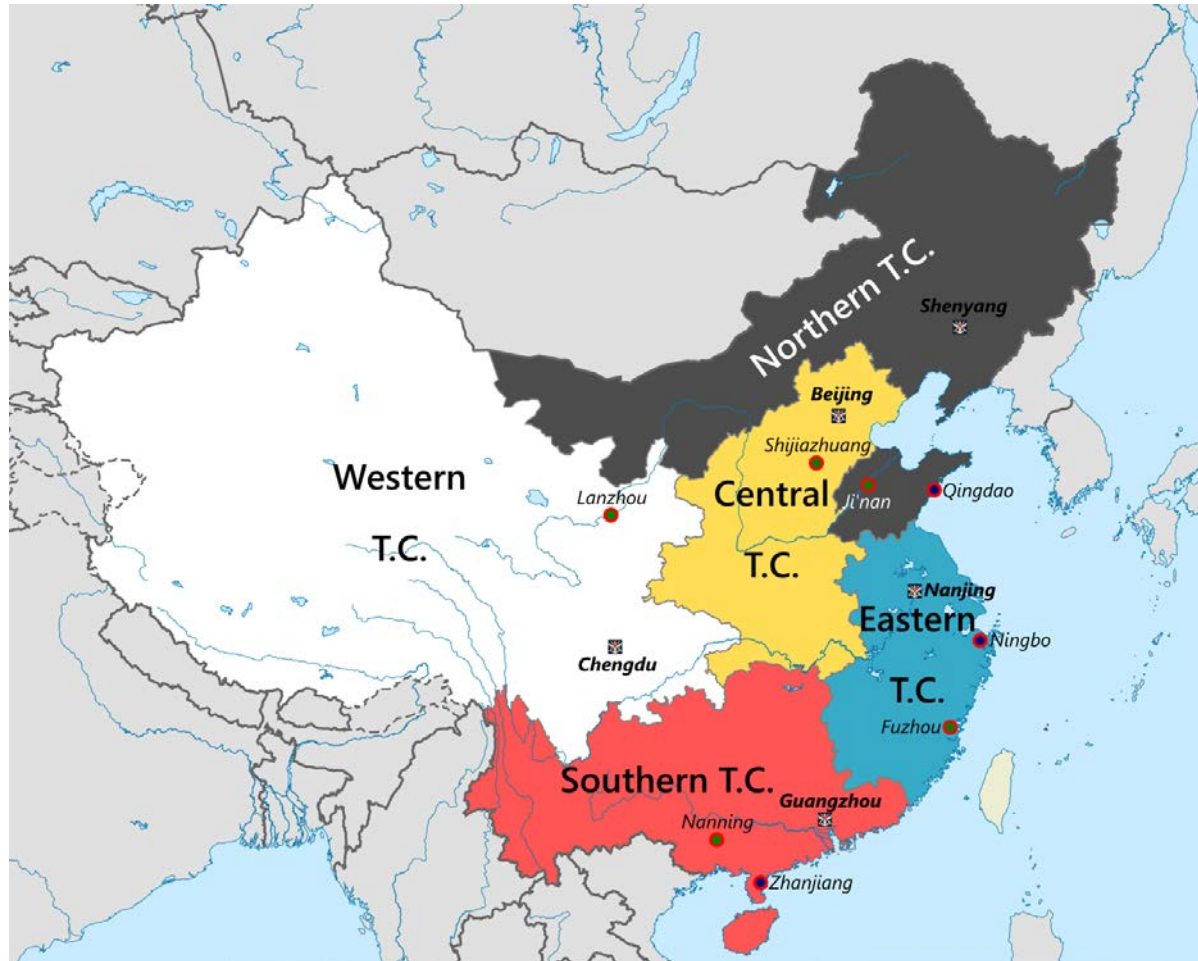


ROC Offensive Capabilities





PRC Capabilities: Eastern Theater Command





The Landing Campaign

- Advance Operations
 - Seizing information dominance
 - Advance integrated firepower assaults
 - Seizing air dominance
 - Seizing sea dominance
 - Advance firepower preparations
 - Advance minesweeping and obstacle destruction
- Embarkation and Sea Crossing
 - Assembly and boarding
 - Sea crossing
- Assault onto Land and Establishment of a Landing Site
 - Assault onto land
 - Capture and construction of campaign landing sites



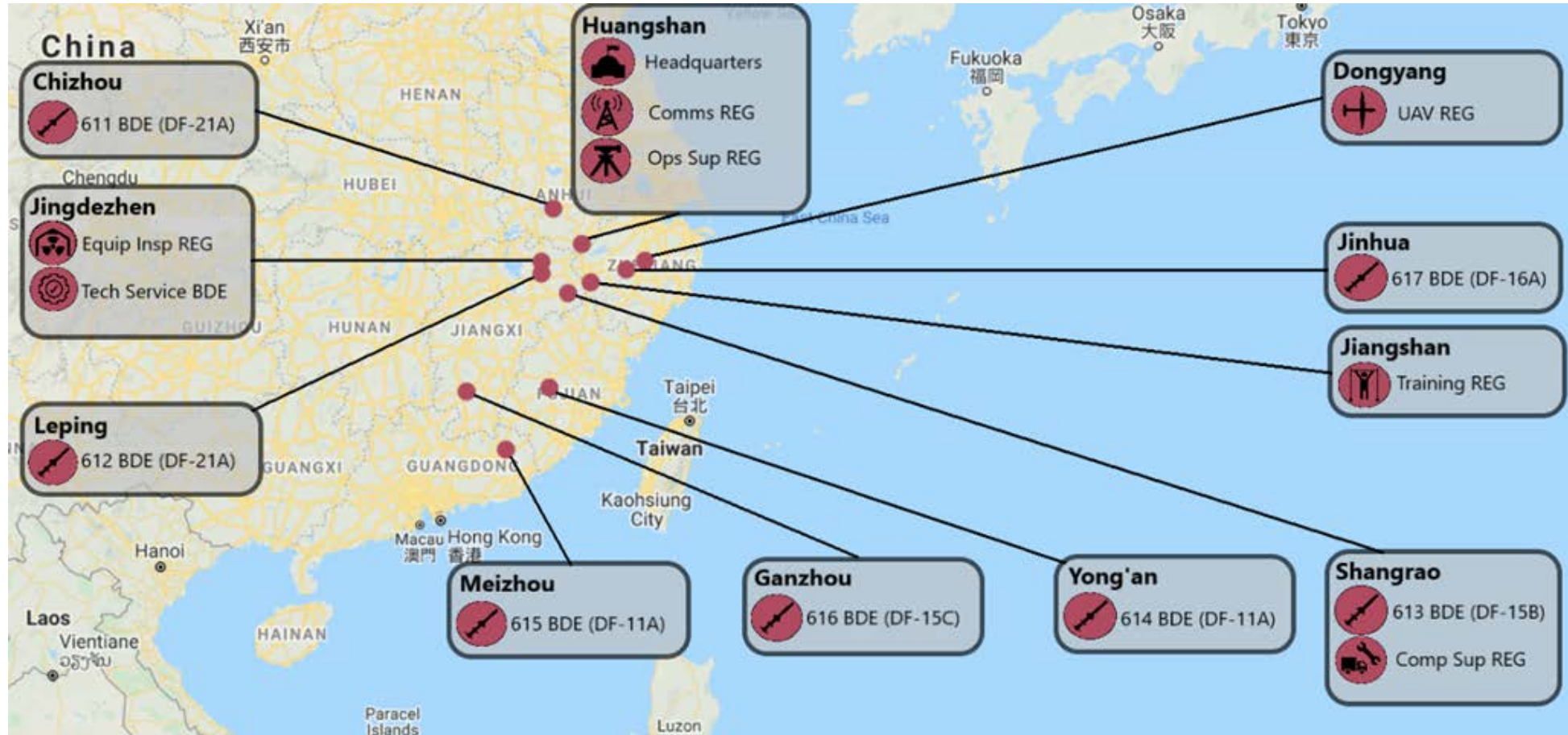


Advance Operations

- PLARF: Base 61
- PLAAF: Shanghai Air Defense Base, Fuzhou Air Defense Base, Bomber Division, Air defense, special mission aircraft
- PLAN: Bomber regiment, aviation brigades, special mission aircraft



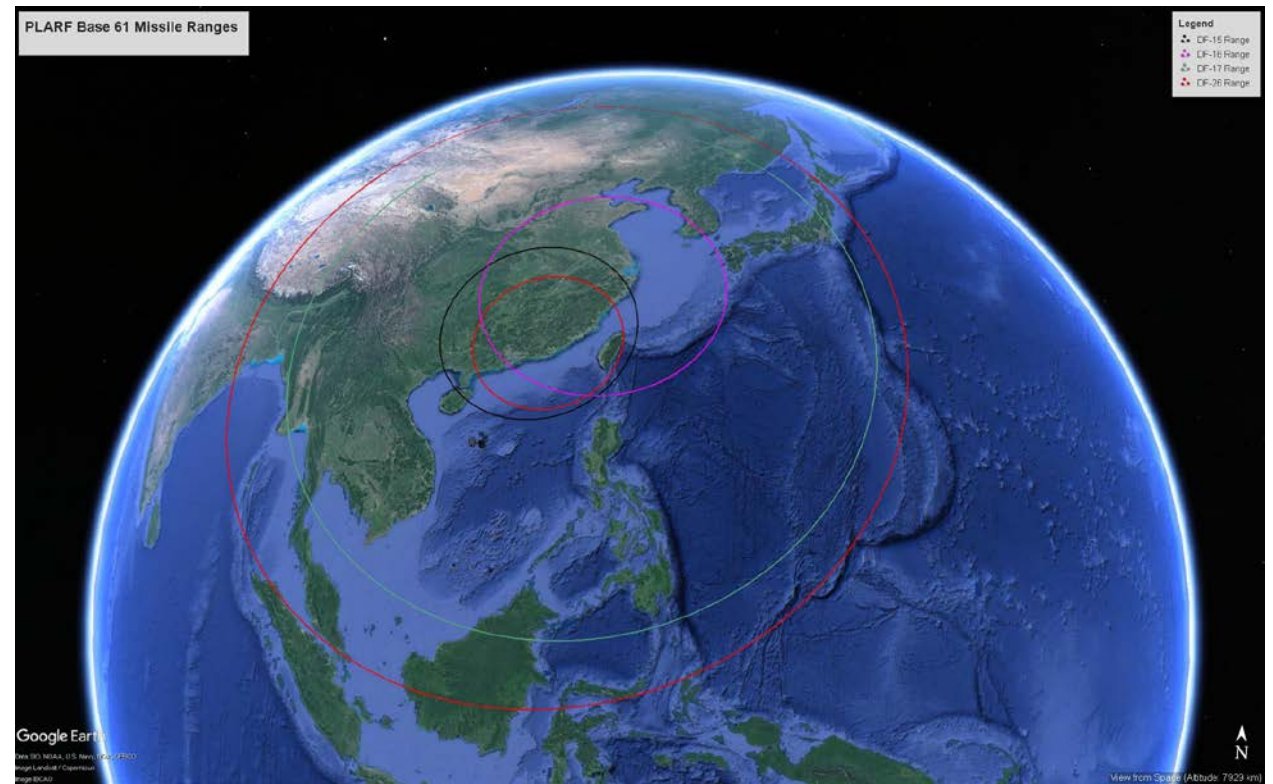
PLA Rocket Force: Base 61





PLARF Base 61: Missiles and ranges

Missile Type	Class	Range	Launchers
DF-11A	SRBM	500-600km	36-48
DF-15B/C	SRBM	800km	36-48
DF-16A	SRBM	800-1000km	36-48
DF-17	MRBM	1800-2500km	12-24
DF-26	IRBM	3,000-5,500km	18-36





Eastern Theater Command Air Force





PLAAF and Naval Aviation Combat Aircraft



J-10



JH-7A



J-20



SU-30MKK



J-10AH



J-16



J-8



J-11

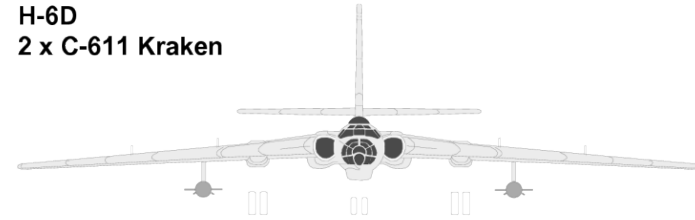
Aircraft Generation	In Theater Total
3 rd Gen	24-36
4 th Gen	192-288
4.5 Gen	48-72
5 th Gen	24-36



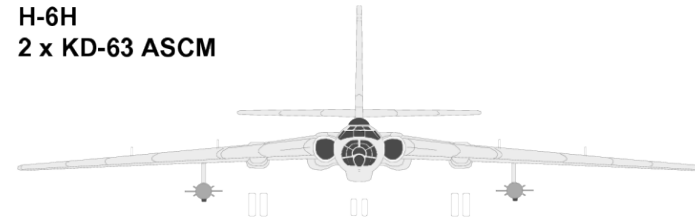
PLAAF and Naval Aviation Bombers



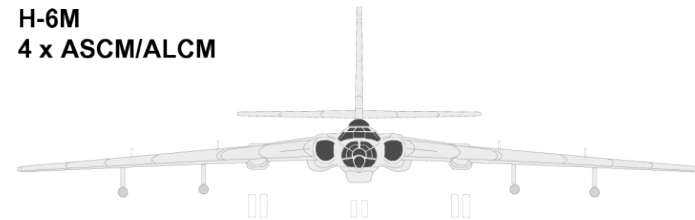
H-6D
2 x C-611 Kraken



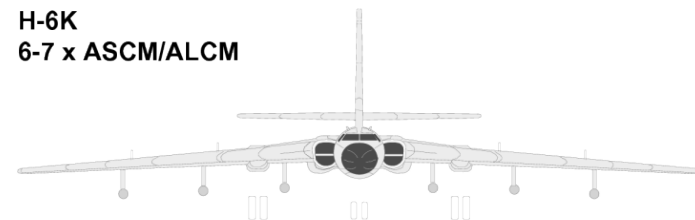
H-6H
2 x KD-63 ASCM



H-6M
4 x ASCM/ALCM



H-6K
6-7 x ASCM/ALCM





PLAAF/PLANAF Special Mission Aircraft



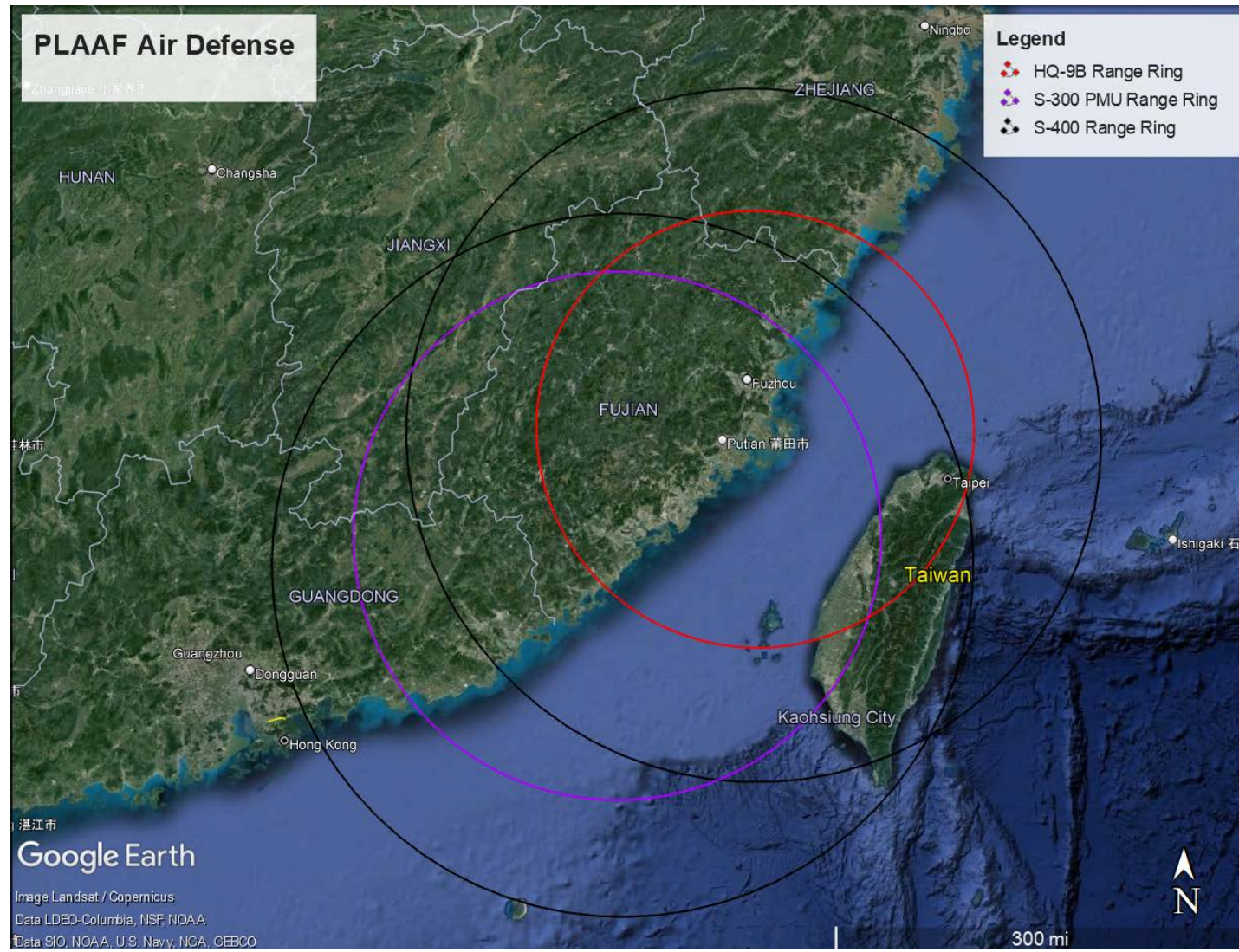


Embarkation, Sea Crossing, and Landing

- PLAN: Landing ship flotilla, destroyer flotilla, coastal defense bases
- PLAGF: 71st Group Army, 72nd Group Army, 73rd Group Army, PLAAF Airborne
- PLAAF: Air Defense

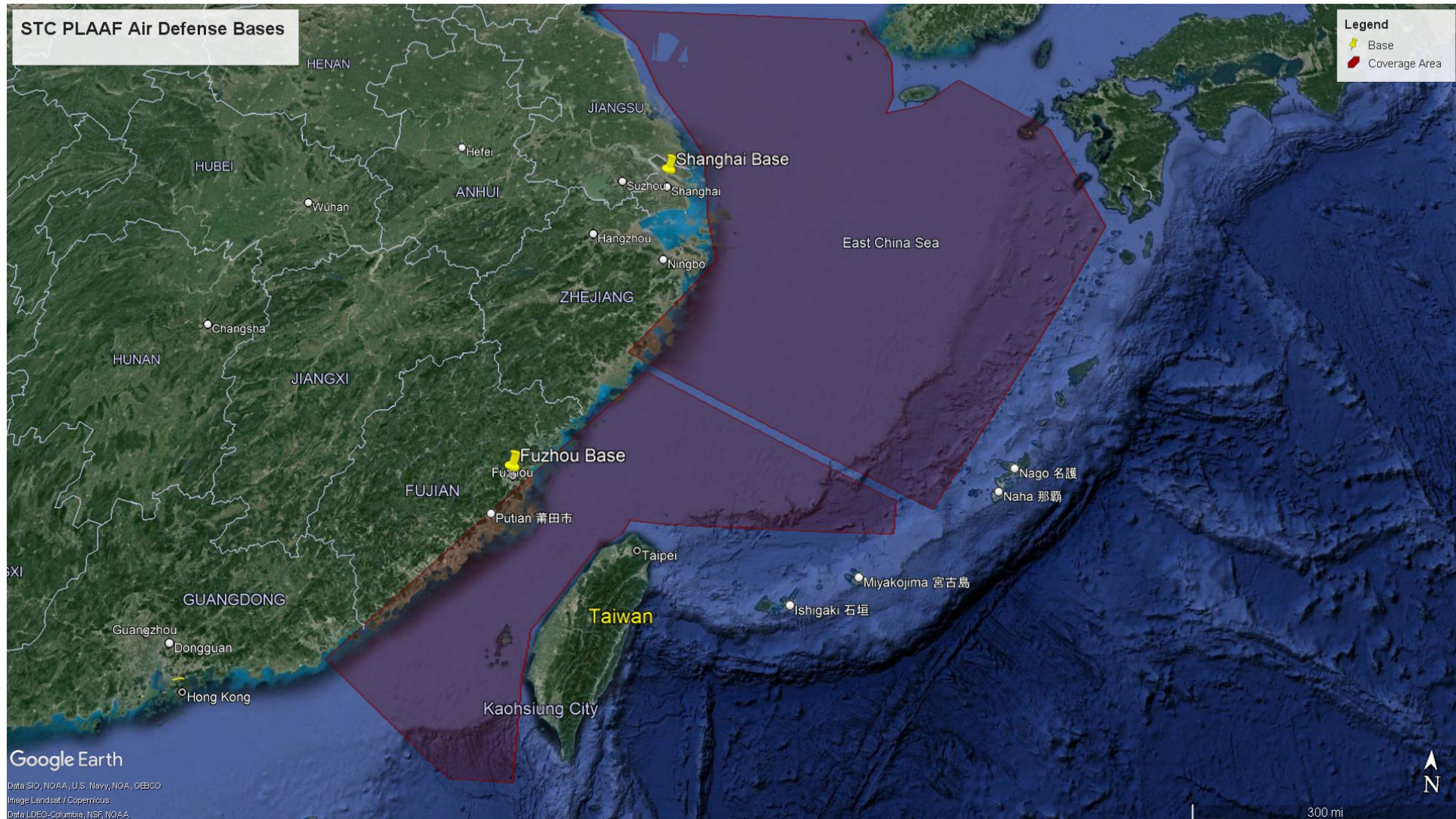


PLAAF Air Defense





ETC Coastal Defense Bases





PLAN Coastal Defense

CDCM



YJ-12



YJ-62

Frigate Flotillas



Type 056

Minesweeper



Type 081

Fast Attack Craft



Type 022



Type 037



PLAN DDG and FFGs

Luyang III DDG



Jiangkai II FFG



Luyang II DDG



Sovremenny DDG





PLAN Landing Ship Flotilla

LST



Type 072

LPD



Type 071

LHD



Type 075

LCAC



Type 726



ETC PLAGF: 71st, 72nd, and 73rd Group Armies

Group Army	Heavy Combined Arms Brigades	Medium Combined Arms Brigades	Light Combined Arms Brigades	SOF Brigade	Amphib. Combined Arms Brigades	Support Brigades
71 st	4	1	1	1	0	5
72 nd	1	2	1	1	2	6
73 rd	1	0	2	1	2	5



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ROC Doctrinal Modernization (Slide 2)

The ROC almost adopted what former Chief of General Staff Adm. Li Ximing calls the Overall Defense Concept (ODC). The ODC is a strategy to utilize asymmetric capabilities in combination with conventional capabilities to protract conflict with the PRC and raise the costs of attempted landing campaigns. This strategy prioritizes a force buildup, a new concept of operations, and enhancing US-ROC defense cooperation.

The force buildup under ODC would balance modern conventional capabilities and asymmetric capabilities. Under the ODC, Taiwan would seek to balance high end systems, that can be used to deter aggression, conduct precision strikes, and provide early warning capabilities. Additionally, the ROC should invest in multi-layer missile defense capabilities. Under this strategy, a low number of high-quality platforms will enable the ROC military to conduct key missions, while reducing maintenance costs. In particular, maintaining high operational rates among the ROC's newer more capable aircraft has been a problem spot for ROCAF readiness.

The second component of the force buildup under ODC is to procure asymmetric capabilities that are mobile, easily concealed and camouflaged, numerous, easily sustained, and can operate in a dispersed configuration. These systems should be more numerous than their conventional counterparts and would consist of platforms such as agile minelaying ships, coastal defense cruise missiles, HIMARS, fast attack craft, UAS, jamming capabilities, and MANPADS or other SHORAD.

Third, force buildup must address is to increase the readiness of reserve forces. Since the end of conscription in 2016, the ROC has faced manning and readiness issues that stem from a lack of sufficient training and personnel, these issues must be addressed.

The ODC has faced resistance by the ROC military and MND due to their organizational preferences for a more traditional strategy that is focused on deterring the PLA via the ROC Military's own ability to strike the PRC mainland with standoff cruise missiles, ground launched cruise missiles, and short ranged ballistic missiles. These high end and expensive systems are likely not able to be maintained or of sufficient enough number to raise the costs of PLA action against Taiwan, not that this strategy is necessarily effective to begin with. Organizational preferences combined with what is publicly not a rock solid commitment has hampered what many consider to be a preferential course for ROC military modernization.

ROC Capabilities: ROC Combat Aircraft (Slide 3)

The ROC Air Force and Air Defense Artillery and Missile Command field relatively small numbers of modern and capable systems. The ROC Air Force currently maintains nine airfields for fighter, ground attack, airborne early warning and electronic warfare, and anti-submarine warfare aircraft spread out across Taiwan.

Taiwan's fighter and ground attack fleet consists of F-16A/B aircraft that are in the process of being upgraded to Block 70 standards, Mirage 2000-5 EI/DI aircraft that were upgraded in 2017 to allow for ELINT and BVR capabilities, indigenously produced F-CK-1A/B/C/D aircraft, and F-5 E/F aircraft. The Mirage 2000-5 EI are substantially more expensive to maintain than the F-16 or the domestically

produced F-CK-1 and their upgrade costs were exceedingly expensive. It is likely that the mirage fleet is operating fewer than the 48 aircraft originally purchased, and they may likely be phased out of service. These are deployed in an interceptor role, and the rate of PRC missions around the island has not been kind to these aircraft.

The F-CK-1 is an indigenously produced dual engine multirole aircraft first delivered to the ROC air force in 1994. All 130-production aircraft were manufactured by 1999. The aircraft is equipped with a radar system developed from the AN/APG-67 and AN/APG-66, giving it look down/shoot down capability. Subsequent upgrades to the platform improved its ability to carry and employ more BVR missiles and anti-radiation missiles, improved flight control systems, improved electronic warfare capabilities, indigenously developed flight control software, and upgraded landing gear to support the heavier loadouts. All aircraft in the inventory were upgraded to the C/D standard by 2018. These aircraft are stationed at Qing Quan Gang (Ching Chuan Kang) AFB and Tainan AFB.

The oldest of the ROC's fighter and attack inventory are its F-5E/F aircraft. These aircraft became second line fighters by the 1990s after the introduction of the aircraft mentioned above.

The ROC military maintains an inventory of relatively modern munitions, both domestically produced and acquired from abroad. The ROC has imported numerous air to air missiles from the US, including AIM-120C AMRAAMs, AIM-7, various variants of the AIM-9, AGM-88 HARM, and AGM-84s. Domestically produced munitions include TC-1 IR guided missiles, TC-2 BVR missiles, and Wan Jian land attack cruise missiles.

ROC AF: AEW, ASW, EW, and Airlift (Slide 4)

The ROC Air Force maintains a fleet of ASW, airborne early warning, and electronic warfare fixed wing aircraft. These aircraft are all based at the north and south airfields at Ping Dong (Pingtung) AFB on the southern end of the Island. The aircraft based here include Six E-2C AEW aircraft (currently slated to be upgraded to the D standard?), between six and 12 P-3C ASW aircraft (12 aircraft were purchased by the ROC navy in 2007 and a UI number were transferred to the ROCAF), and one C-130H that has been modified to perform ELINT tasks. The ROC also maintains a fleet of C-130 H for airlift and disaster relief.

The ROC employs ISR UAVs that range from RQ-11 sized platforms to MQ-1 sized strike capable platforms.

ROC Aircraft Basing (Slide 5)

Around two thirds of Taiwan's F-16 fleet is deployed to Jiayi (Chiayi) and Hsinchu Air Bases on the east coast, and the remainder is based at Hualien Jiashan AFB.

The F-CK-1 aircraft are stationed at Qing Quan Gang (Ching Chuan Kang) AFB and Tainan AFB.

Most of the F-5 aircraft have been retired, with a handful remaining based at Chengcheng AFB and Hualien AFB performing combat and reconnaissance tasks, but are primarily trainers. Older inoperable aircraft have also been used as decoys.

ROCAF special mission and transport aircraft are all based at the north and south airfields at Ping Dong (Pingtung) AFB on the southern end of the Island.

ROC Air Defense (Slide 6)

The ROC maintains a modern air defense system based around US imported Patriot PAC-2s and PAC-3s. Taiwan received PAC-2 systems between 1997 and 2001. The ROC began ordering PAC-3s as early as 2011 with additional orders in March 2021. The ROC deploys two domestically produced systems. The Tian-Kong or Sky-Bow can be used for short to long range air defense as well as missile defense. The ROC also deploys the MIM-23 Hawk systems for medium range air defense as well as Avenger and domestically produced sky sword 1 for SHORAD.

ROC Offensive Capabilities (Slide 7)

The ROC also deploys small batteries of domestically developed ground launched cruise missiles that are capable of striking ships or shore based targets, the Xiongfeng IIE GLCM and yunfeng supersonic cruise missile. The ROC recently purchased the coastal defense variant of the Harpoon Block II in September 2021. The ROC also deploys a domestically developed SRBM, the Tian Ji.

Additionally, the ROC has acquired a domestically produced anti-radiation loitering munition, the Jian Xiang, which looks similar to the Harpy UAV from Israel, which is deployed on road mobile launchers and are intended to suppress land and ocean-based radar systems.

PRC Capabilities: Eastern Theater Command (Slide 8)

The Eastern Theater Command is the TC primarily responsible for conducting joint operations targeting Taiwan.

The Landing Campaign (Slide 9)

The 2003 Science of campaigns outlines a three part landing campaign designed to suppress and destroy defenses, embark and protect landing flotillas, and conduct landing operations and capture beachheads. The three phases of this campaign are outlined here.

Advance Operations (Slide 10)

Advance operations will be composed of a series of strikes conducted by PLARF Base 61, PLAAF aviation brigades subordinate to the Shanghai and Fuzhou Air defense base, PLAAF eastern theater bomber division, special mission aircraft, PLAN aviation brigades, a bomber regiment, and PLAN special mission aircraft.

PLA Rocket Force: Base 61 (Slide 11)

The Eastern Theater Command is home to the Base 61 of the PLARF, which is the PLARF base dedicated to Taiwan strike missions. A Base is usually equivalent to a one or two star command. Each Base in turn may oversee one or more small- physical locations housing military forces. PLARF Bases typically have six to seven subordinate launch brigades. Each brigade as around six launch battalions, with each battalion having a subordinate launch company.

Unlike most other bases, Base 61 has not only retained its Technical Service Regiment, but upgraded it to a Missile Technical Service Brigade, likely due to the large number of SRBMs this base would need to test and transport. Additionally, Base 61 has a subordinate UAV regiment that is likely responsible for reconnaissance, targeting, and damage assessment for the SRBM brigades. In addition to the PLARF, the

PLAGF also maintains long range rocket artillery system, the PCL 191. The PCL 191 which has a range of around 220KM and fires a variety of guided rockets.

PLARF Base 61: Missiles and Ranges (Slide 12)

Base 61's conventional armaments intended for a Taiwan mission include six brigades armed with a range of MRBMs, SRBMs, and IRBMs. Additionally, it is likely that other PLARF brigades with the ability to range Taiwan could be involved in striking targets on the island if deemed necessary.

Eastern Theater Command Air Force (Slide 13)

The Eastern Theater Command has two subordinate Air Defense Bases, the USAF numbered air force equivalent units responsible for managing PLAAF assets in a geographic area, a bomber division and a special mission aircraft division. Additionally, PLANAF aviation units will assist in the air bombardment campaign. These PLANAF units are based throughout the east coast, but there are a higher concentration of them in Zhejiang province, between the Shanghai and Fuzhou base areas.

Air Defense Bases are organizations that are similar to U.S. Air Force Numbered Air Forces. Like other PLA organizations, the term "Base" should not be interpreted as "facility," but instead as a relatively large command structure at the colonel or up to two-star level. These Bases are responsible for both combat operations and force building. This means that these Bases care and feed for a number of fighters, surface-to-air missile, and radar brigades as well as communications units within their region on top of acting as regional air defense commands that oversee defensive air operations within their region.

PLAAF and Naval Aviation Combat Aircraft (Slide 14)

The PLAAF and PLANAF have a variety of 3rd, 4th, 4.5, and 5th generation combat aircraft at their disposal to act as CAPs, conduct SEAD/DEAD, escort bombers, and perform other tasks. All 4th gen aircraft and above are midair refueling capable. As a quick terminology note, the PLAAF refers to what we consider 5th Generation aircraft as "4th generation", what we define as 4th generation aircraft as "3rd generation," et cetera. But for consistency's sake, I will use Western definitions of aircraft generations.

The primary ground attack aircraft are the J-10C, the J-16, and JH-7A. J-11s, SU-30MKK, J-10A/B and J-7 are primarily tasked with air defense, escort, and defensive air operations. The J-20 is a fifth-generation aircraft with high end sensors and stealth capability.

The J-10 is a domestically produced single seat multi-role aircraft. It's A and B variants are primarily interceptors and air defense aircraft, while the C variant is strike capable. The J-11 is a PRC domestically produced copy of the SU-27. The J-16 is a PRC domestically produced SU-35. The JH-7A is a cruise missile carrying fighter/bomber intended to strike ships or ground targets. The J-15 is a carrier-based aircraft based on the J-11, which is cruise missile capable (primarily for anti-ship cruise missiles). The J-7 is a domestically produced modernized Mig-21, which is actively being phased out in favor of the J-10.

The PLAAF currently views 5th generation aircraft as the future core of their fighter fleet. The PLAAF is gradually introducing the J-20 to its operational force, with two operational units fielding the J-20 as of 2021. The PLAAF plans on 4th generation fighters such as the J-10, J-11, and J-16 variants to be the main body of their force. This is similar to how the U.S. Air Force views 5th generation aircraft as force

enablers that use their high-end sensors and capabilities to empower 4th generation aircraft. J-20s will likely be deployed to conduct operations against HVAA and enemy fifth generation aircraft.

PLAAF and Naval Aviation Bombers (Slide 15)

The PLAAF and PLANAF maintain around 80 H-6 variants in the ETC, each armed with a variety of cruise missiles for land attack or anti-ship missions.

Special Mission Aircraft (Slide 16)

PLAAF and PLANAF special mission aircraft are primarily Y-8/9 based AEW&C, EW, ELIN, ASW, and command aircraft. Given the small number of tankers at the PLA's disposal they are likely treated as special mission aircraft and include H-6U, IL-78, and Y-20U. There are probably around 20 AEW aircraft in the ETC.

Embarkation, Sea Crossing, and Landing (Slide 17)

To conduct the landing phase of the campaign, the PLA has at its disposal a variety of assets to embark, transport, protect, and land on Taiwan, including amphibious PLA ground forces, PLAAF airborne brigades, landing ship flotillas, surface combatants, and PRC based air defense systems.

PLAAF Air Defense (Slide 18)

The PLAAF maintains control over theater air defense capabilities that would be employed during an invasion of Taiwan. PLAAF Air Defense Bases under the ETC also have subordinate air defense brigades, which are believed to be equipped with S-300 PMUs, HQ-9B, and possibly S-400s. The latter of which have a roughly 300km range and can range the entire island of Taiwan. However, the mountain range in the middle of the island hinders the ability for PRC based SAM batteries to engage targets on the western side of the island.

ETC Coastal Defense Bases (Slide 19)

The Eastern Theater Command is home to two coastal defense bases responsible for conducting defensive operations in their AO. The bases are the Fuzhou Coastal Defense Base and the Shanghai Coastal Defense Base. PLAN ASW is primarily a defensive operation focused on keeping USN submarines from interfering with landing operations.

PLAN Coastal Defense (Slide 20)

The Fuzhou coastal defense base is home to two frigate flotillas, a fast attack craft squadron, and two CDCM squadrons. The Shanghai coastal defense base is home to two frigate flotillas, two minesweeper squadrons, a fast attack craft squadron, and a CDCM regiment.

PLAN DDG and FFGs (Slide 21)

The ETN is home to two destroyer flotillas composed of 6 or 7 DDGs and 5 or 6 FFGs. The Luyang II and III have longer range naval HQ-9 SAMs, while Jiangkai II and Sovremenny DDGs have HHQ-16 short range SAMs.

PLAN Landing Ship Flotilla (Slide 22)

PLAN landing ship flotillas are composed of a mix of 20ish LSTs and a handful of LPDs. Landing ship flotillas can move one combined arms brigade per trip. The STN is currently the first recipient of the Type-075 LHD, which is currently only equipped with vertical lift aviation. While this is outside of the ETC, it is likely to be deployed in a Taiwan invasion. Both the Type 071 and 075 have well decks for AAVs or LCACS. PLAAF airlift can support one mechanized combined arms brigade or two light combined arms brigade per trip.

ETC PLAGF: 71st, 72nd, and 73rd Group Armies (Slide 23)

The 71st, 72nd, and 73rd Group Armies are the primary PLAGF units responsible for conducting landings during a Taiwan invasion. These group armies are composed of a variety of combined arms brigades, with a total of four amphibious combined arms brigades.