CSG / ESG Air Asset Management

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The overall classification of this brief is:

UNCLASSIFIED

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Objective

- Present the roles, responsibilities, and processes of US Navy and Marine Corps aviation assets in Carrier Strike Group (CSG) and Expeditionary Strike Group (ESG) operations

References

- JP 3-02 (JAN 2019) – Amphibious Operations
- JP 3-30 (JULY 2019) – Joint Air Operations
- NTRP 3-20.6.06 (NOV 2014) – CVN Class Tactical Publication
- NTTP 3-02.1.3 (SEP 2017) – Amphibious/Expeditionary Operations Air Control
- NTTP 3-03.4 (AUG 2015) – Naval Strike and Air Warfare
- NTTP 3-03.4.3 (JAN 2018) – Multi-Service Tactics, Techniques, and Procedures for Strike Coordination and Reconnaissance
- NWP 3-30 (DEC 2017) – Maritime Command and Control of Air Operations (MC2AO)
- NWP 3-56 (DEC 2015) – CWC Manual

Overview

- Define the CWC Strike Warfare Commander (STWC)
- Define the CWC Air Resource Element Coordinator (AREC)
- Describe Papa/Romeo watch roles & responsibilities
- Discuss APB planning factors
- Present CVW/CVN resources
  - CVW composition
  - CVN flight operations
  - EMCON Considerations
- Present ESG (ARG/MEU) factors and resources
  - Air Combat Element (ACE) composition
  - LHD/LHA/MAGTF operations

CWC Organization

COMPOSITE WARFARE COMMANDER (CWC) "_B/V"

- AIR & MISSILE DEFENSE COMMANDER (AMDC) "_W/C"
- STRIKE WARFARE COMMANDER (STWC) "_P/K"
- INFORMATION OPERATIONS WARFARE COMMANDER (IWC) "_Q/I"
- SEA COMBAT COMMANDER (SCC) "_Z"
  - SURFACE WARFARE COMMANDER (SUWC) "_S/T"
  - ANTISUBMARINE WARFARE COMMANDER (ASWC) "_X/Y"

BALLISTIC MISSILE DEFENSE CDR "_U"	UNDERWAY REPLENISHMENT GROUP CDR (URGC)	SCREEN COMMANDER (SC) "_N/D"	OPERATIONAL DECEPTION GROUP CDR (ODGC)	MIO COMMANDER (MIOC) "_J"
AIR RESOURCES ELEMENT COORDINATOR (AREC) "_R"	AIRSPACE CONTROL AUTHORITY (ACA)	FORCE TRACK COORDINATOR (FTC) "_F"	CRYPTOLOGIC RESOURCE COORDINATOR (CRC)	HELO ELEMENT COORDINATOR (HEC) "_L"
SUB OPERATIONS COORDINATING AUTHORITY (SOCA)	TLAM LAUNCH AREA COORDINATOR (LAC)		TLAM STRIKE COORDINATOR (TSC)	COMMON TACT PICTURE MANAGER (CTPM)

PAPA Responsibilities

- Airborne power projection ashore
  - Air Interdiction (AI)
  - Close Air Support (CAS) / Forward Air Control(Airborne): FAC(A)
  - Offensive Counter Air (OCA)
  - Airborne Electronic Attack (AEA)
  - Suppression of Enemy Air Defenses (SEAD)
  - Strike Coordination and Armed Recconaissance (SCAR)
  - Tomahawk Land Attack Missile (TLAM) coordination
  - Naval Surface Fire Support (NSFS) coordination
- Plan, direct, monitor, and assess assigned strike missions
- Integrate and coordinate CVW resources with MOC and CAOC (via LNO ashore)

PAPA Watch

- PAPA's direct representative
  - Execution of power projection ashore
  - Emergent / external (ATO) tasking coordination
- Manned only during flight ops
- O-4: CAG's Staff (or squadron DH)
- POC to CAOC Combat Ops Division (via LNO)
- Primary coordination authority with outside units and scheduling activities during execution day

ROMEO Responsibilities

- AREC (R) - CVN CO's representative
  - Delegated to TAOs (Tactical Action Officers) outside of flight ops
  - Delegated to the air wing watch during flight ops

- Responsibilities:
  - Execute the airplan
  - Manage and coordinate efficient employment of sea-based aircraft (availability, maintenance, configuration)
  - Maintain awareness of mission to aircraft requirements and communicate airplan deviations to all concerned

ROMEO Watch

- Current day airplan execution
  - Coordinate asset allocation to emergent requirements and communicate airplan changes to all concerned
- Must determine 2nd and 3rd order effects of airplan changes
- Primary coordinator for Warfare CDR's emergent air support requirements or changes

Air Planning Board (APB)

- Three day planning cycle (24 / 48 / 72 hours out)
  - 48 and 72 hour out plans fed to LNO at CAOC
- Led by CVW Operations Officer
- Warfare Commander Representation
  - Must be able to speak for the commander

APB Tasks and Deliverables

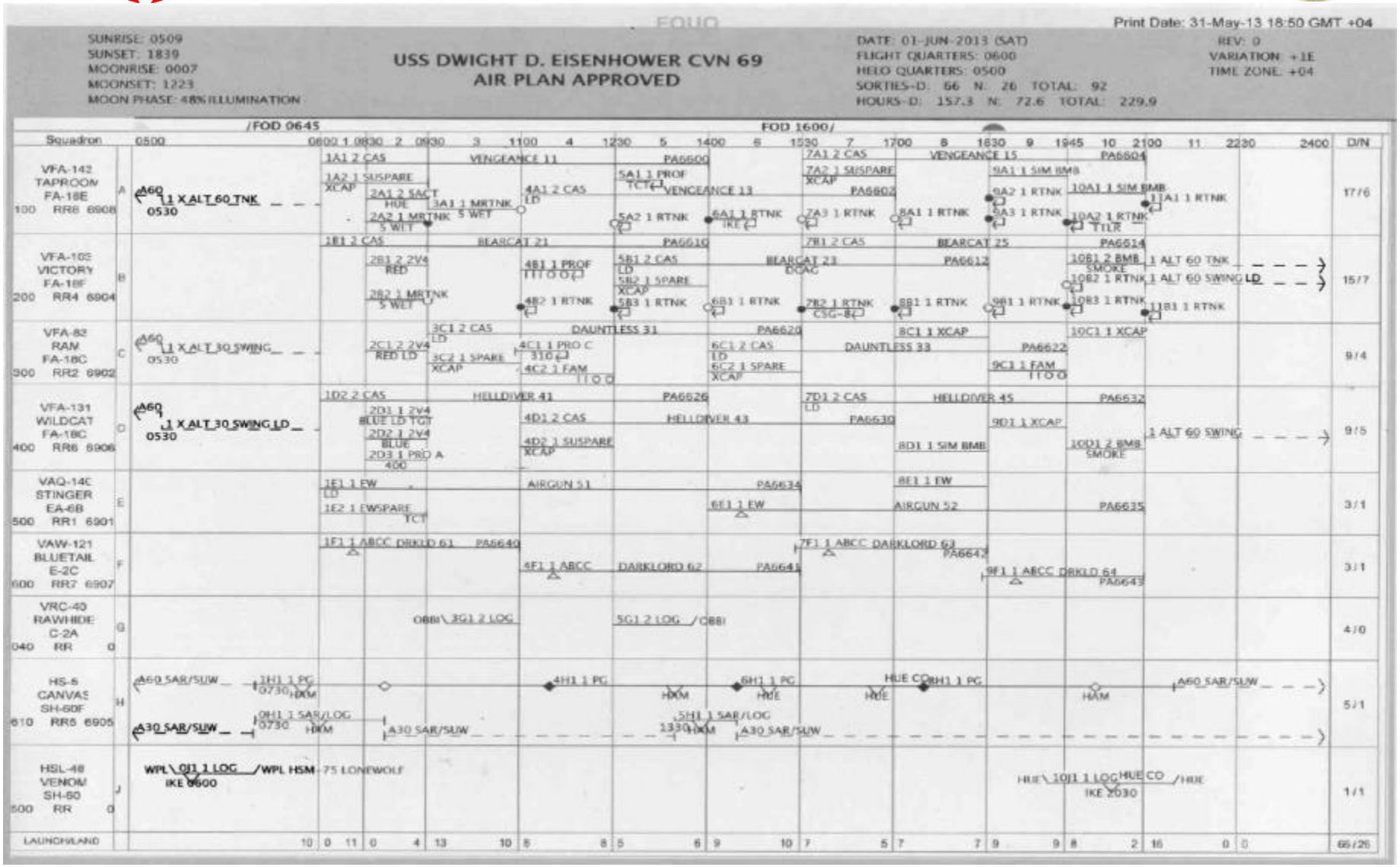
Tasks

- Identify external ranges / non-organic assets required
- Coordinate with AOC Combat Plans Division to verify tasking
- Submit Air Support Requests (AIRSUPREQs or ASRs) / Airspace Control Measure Requests (ACMRs)

Deliverables

- Daily Air Plan (and subsequent draft air plans for 24 / 48 / 72 hrs out)
- Weapons Load Plans

Example Airplan



Battle Rhythm

- Strike Group (and higher)
  - Flag Brief (Warfare CDR's Board / CUB)
  - Future Ops (FOPS)
  - Current Ops (COPS)
  - Operational Planning Teams (OPTs)
- CVW
  - Warfare Action Board (WAB)
  - Mission Planning Team (MPT)

Typical CVW Composition

- 44 x F/A-18C/E/F / F-35C
- 5-7 x EA-18G
- 4/5 x E-2C/D
- 8 x MH-60S
- 11 x MH-60R
- 2 x C-2 or 3 x CMV-22B
- 74-78-ish total

Over 100 pilots to keep current

F/A-18C/E/F Hornet/Rhino

- 4 "Rhino" squadrons
  - If VMFA embarked, then 1 “Hornet/Charlie”
- 10-12 aircraft per squadron
- Multi-mission fighter-attack
  - CAS / FAC(A) (F/A-18F only FAC/A)
  - Fleet Air Defense / DCA
  - Offensive Counter-Air (OCA)
  - Air Interdiction (AI)
  - War at Sea (WAS)
  - Organic tanker (Rhino)
  - Non-Traditional ISR (NTISR)
- Rhino vs. Hornet
  - Combat systems
  - Range / ordnance carriage

F-35 A/B/C

CTOL	STOVL	CV
		
Span (ft) 35 Length (ft) 51.4 Wing Area (ft²) 460	Span (ft) 35 Length (ft) 51.1 Wing Area (ft²) 460	Span (ft) 43 Length (ft) 51.4 Wing Area (ft²) 668
		
Weight Empty (lb) 29,036 * Internal Fuel (lb) 18,480	Weight Empty (lb) 32,161 * Internal Fuel (lb) 14,003	Weight Empty (lb) 32,072 * Internal Fuel (lb) 20,085
Combat radius: 579nm	505nm	615nm

EA-18G Growler

- Replacement for EA-6B Prowler
- 5 aircraft per squadron | 7 aircraft per squadron “Airwing of the Future”
  - Super Hornet airframe & radar
- Improved all-digital EA / EW / ES / CTTG
- Limited self-protect capability (1 or 2 x AIM-120)
- Higher fuel burn rate due to configuration

E-2 Hawkeye / C-2 Greyhound

- E-2C/D: 4 or 5, max 3 on flight deck
  - Airborne C2 / AEW / MAC / NIFC-CA
  - ESM capable
  - Requires HVAA-P in contested environment

- C-2A: Detachment of 2 per CVW
  - Detachment based ashore
  - Typical cargo load: 10k lbs max
  - Typical pax load: 24
  - Limited MEDEVAC
  - Daylight operations only
  - CMV-22B transition

MH-60 Seahawk

- 19 “Seahawk” aircraft with CSG
  - (8) MH-60S (SUW / CSAR / SOF / LOG)
  - (11) MH-60R (SUW / ASW / MAC for WAS)
- M240 / GAU-21 / AGM-114 (S & R)
- MK50 / MK54 torpedoes (R)
- PAX: S (9) vice R (2)
- MH-60S Link-16
- MH-60R Hawklink+Link-16

Aircraft Handling / Logistics

- Typically, 45-50 Aircraft spotted on the flight deck
  - Not all are FMC/MC
  - Remainder are in the hangar bay
- Flight deck elevator use restricted during:
  - Flight ops
  - Heavy sea states
  - High winds
  - Ship maneuvering

Flight Operations

- 10-14 Flight Hour days
- Single flight Deck Crew
  - Launch, Recover, Re-spot, Refuel, Re-arm, and Repeat…
- Sortie generation:
  - Normal: 65-80 (Indefinite)
  - Heavy: 80-100 (1-2 weeks)
  - Surge: 100-120+ (3-4 day sustainment only)
- Recovery types
  - Case I: Day, clear weather
  - Case II: Day, overcast
  - Case III: Night or poor weather
    - Takes longer than Case I/II (longer approach, more time between aircraft, more fuel required)

Flight Deck Ops

- Types of CVN flight deck operations
  - Cyclic
  - Flex Deck
  - Open Deck
  - Alerts
    - Alert Postures
    - Alert Packages

Cyclic Operations

- Most common
- Established rhythm
  - 8 to 10 launch/recovery events of 1+15 / 1+30 hour cycles
  - Usually launch/recover 8-12 aircraft per cycle
  - Strike package: 20-22 aircraft
- Set cycle lengths
  - Time between launch and recovery
  - Predicated on CVN posit, mission, and/or fuel constraints
- Follows a specific launch and recovery sequence
  - Transition number: Sum total of fixed wing launches and recoveries
    - 18 to 25 is optimal

Flex Deck Ops

- No fixed cycle times
  - Launch/recover at any time, simultaneously
- Designed to support dynamic operations
  - Generates more sorties; good for AD / CAS
  - Can mitigate endurance / fuel management concerns
  - Requires extensive sea space
  - May impact aircraft maintenance

Open Deck

- Open Deck ≠ Flex Deck
- Applies to recovery of aircraft only
- Ship remains into the wind ready to recover aircraft
- Set for a specific window of time

Alert Postures

- Alert 5 (A5)
  - Ship at Flight Quarters
  - Aircraft lined up with catapults, no aircraft maintenance
  - Aircrew in the aircraft, engines off, ground power applied
  - Catapults and arresting gear manned and ready
  - Maximum of 2 aircraft at Alert 5
- Alert 15 (A15)
  - Ship at Flight Quarters
  - Aircraft positioned with a clear path to the catapults, no maintenance
  - Aircrew in flight gear in the Ready Room
  - Catapults manned, arresting gear crew in the crew shelter

- **Counts against** aircrew and flight deck crew duty day limits

Alert Postures cont.

- Alert 30 (A30)
  - Aircrew with flight gear at the ready – may be asleep
  - Aircraft on the flight deck, no maintenance
  - Catapults and arresting gear ready, but unmanned
- Alert 60 (A60)
  - Aircrew assigned
  - Aircraft maintenance authorized
  - Minor catapult and arresting gear maintenance authorized

- Do **not** count against aircrew or flight deck crew duty days

Alert Packages

- Set by warfare area
- Includes supporting aircraft
  - E-2C/D (AEW), EA-18G (EA), Tankers
- Alert A – Imminent threat to CSG
  - Highest alert posture is A5
  - Support assets at lower alert posture
- Alert B – Flexible, quick response to threats
  - Highest alert posture is A15
- Alert C – Routine deployed operations
  - Highest alert posture is A30
- Alert D – Low threat environment
  - Highest alert posture is A60
  - Typically at night, far from land

Alert Package Example

- Alert B – AW (Air Warfare)
  - 1 x A15 MH-60S (Plane Guard)
  - 2 x A15 Fighters
  - 2 x A30 Fighters
  - 1 x A30 Growler
  - 1 x A30 Hawkeye
  - 1 x A30 Tanker
  - 1 x A60 Tanker
- There is a difference between launching the A15 Fighters and launching the Alert B package
  - What is the capability you need?

EMCON Considerations

- Comms
  - Launching aircraft transmit outside of EMCON circle
  - CVN utilize J-voice, SATCOM, or chat to communicate with aircraft
- Radars
  - Utilize E-2 for AD and to control MISR missions
  - Case II/III recoveries
    - No ACLS
    - No CVN radars
    - HCA (Hawkeye Control Approach)
- Potential Strike Package Impacts
  - Join up of package may require time and thus more fuel required
- Decreased opportunity for on deck system checks, thus requiring increased number of ready spares

ESG(ARG/MEU) Composition

- Navy Staffs
  - Flag-led Command Element (ESG) (as required)
  - O-6 led Amphibious Squadron Staff (PHIBRON)
  - O-5 OIC of Tactical Air Control Squadron (TACRON) Detachment
- Navy Units
  - 3 Amphibious Class ships (LHD, LPD, LSD)
  - Cruiser / Destroyer Class ships (as available) provide ‘W’ and ‘Z’
  - External MPRA support
- MEU sized MAGTF (2,000+ personnel)
  - O-6 led
  - Contains Ground Combat Element (GCE/BLT), Aviation Combat Element (ACE), Logistics Combat Element (LCE), and HQ element-dispersed throughout ARG

ESG Air Assets

- MEU air assets are structured and intended to support the MEU, not the maritime missions of the ESG
- MEU
  - 6 x AV-8B Harrier, or
  - 8 x F-35B Lightning II (FY18)
  - 4 x AH-1Z Cobra
  - 4 x UH-1Y Huey
  - 10-12 x MV-22B Osprey
  - 4 x CH-53E Super Stallion
- Navy
  - 2-3 x MH-60S
  - MH-60R (CRUDES)

AV-8B Harrier

- Short Takeoff and Vertical Landing (STOVL) capable
- Air-Air (limited)
- Air-Ground
  - Primary mission: Close Air Support for ground forces
  - LITENING Targeting pod
  - Guided and unguided weapons
  - In-flight refueling capable
  - 300 nm combat radius
- Must have clear deck for takeoff

F-35B Lightning II

- Vertical Takeoff and Landing (VTOL) capable
- Very Low Observable (VLO) Stealth
- Air-Air
- Air-Ground
  - Primary mission: Close Air Support for ground forces
  - Advanced Electro-Optical Targeting System (EOTS)
  - Guided and unguided weapons
  - In-flight refueling capable
  - 505 nm combat radius
- Must have clear deck for takeoff

AH-1Z Cobra / UH-1Y Huey "Skids"

- Cobra: Air-to-ground
  - Primary mission: Close Air Support for ground forces
  - FLIR
  - M197 Gatling gun, rockets, AGM-114, AIM-9

- Huey: C2, Forward Air Control, Assault transport, and Medevac
  - 2.75” rockets, 7.62 mm machine guns

CH-53E Super Stallion

- Assault transport
  - 55 troops
- Heavy lift capacity
  - Up to 36,000 lbs externally

MV-22B Osprey

- Replacement for CH-46
- Assault transport
  - 24 troops, or up to 15,000 lbs cargo externally
  - C2 platform
- Shipboard ops & maintenance intensive
- Inflight refuel capable

LHA / LHD Flight Operations

- Similiar planning process as CSG
  - Still produce an air plan via daily battle rhythm
  - Still use this air plan for execution guidance
  - MUST deconflict ship/well-deck operations/evolutions w/flight ops
- Similar wind / PIM issues as CSG
  - Fixed wing launches require wind over deck/restrict other evolutions
  - Fixed wing launches lock down deck / requires clear deck run
  - Deck spotting/handling
- Well-deck operations during flight ops
  - Possible, but limitations based on sea state and other factors
  - Fixed wing launches versus helo ops
  - Usually need to launch helos first, make room for Fixed Wing deck runs

LHD/A – CVN Comparison

ARG/MEU	CVN
TACRON OIC	AIR OPS/CVW OPS/STRIKEOPS
AATCC	CATCC
“ICEPACK”	“STRIKE”
“GREENCROWN”	“REDCROWN”
SACC/LFOC	STWC (PAPA) WATCH
TACCWO / ACE SDO / MEU AIR O	CVW (ROMEO) WATCH
LHD/A AIR-O / TACRON OIC	CVN STRIKE OPS (AIRPLAN/ ATO PRODUCTION)
ACE CO	CAG

Summary

- Define the CWC Strike Warfare Commander (STWC)
- Define the CWC Air Resource Element Coordinator (AREC)
- Describe Papa/Romeo watch roles & responsibilities
- Discuss APB planning factors
- Present CVW/CVN resources
  - CVW composition
  - CVN flight ops
  - Considerations
- Present ESG (ARG/MEU) factors and resources
  - Air Combat Element (ACE) composition
  - LHD/LHA/MAGTF operations

Additional Fires Training

- Maritime Fires Course, CDP: J-2G-0655
  - Staff Watch Officers
  - Intelligence Watch Officers
  - Targeteers attached to:
    - Carrier Air Wings (CVWs)
    - Carrier Strike Groups (CSGs)
    - Amphibious Ready Groups (ARGs)
    - Fleet Maritime Operations Centers (MOCs)
- JFACC Augmentation Staff Course (JASC), CDP: K-2G-5001
  - Personnel expected to augment the JFACC afloat or shore-based
  - TACRON
  - CVW Staff
  - CVN Strike Ops Personnel
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Questions?