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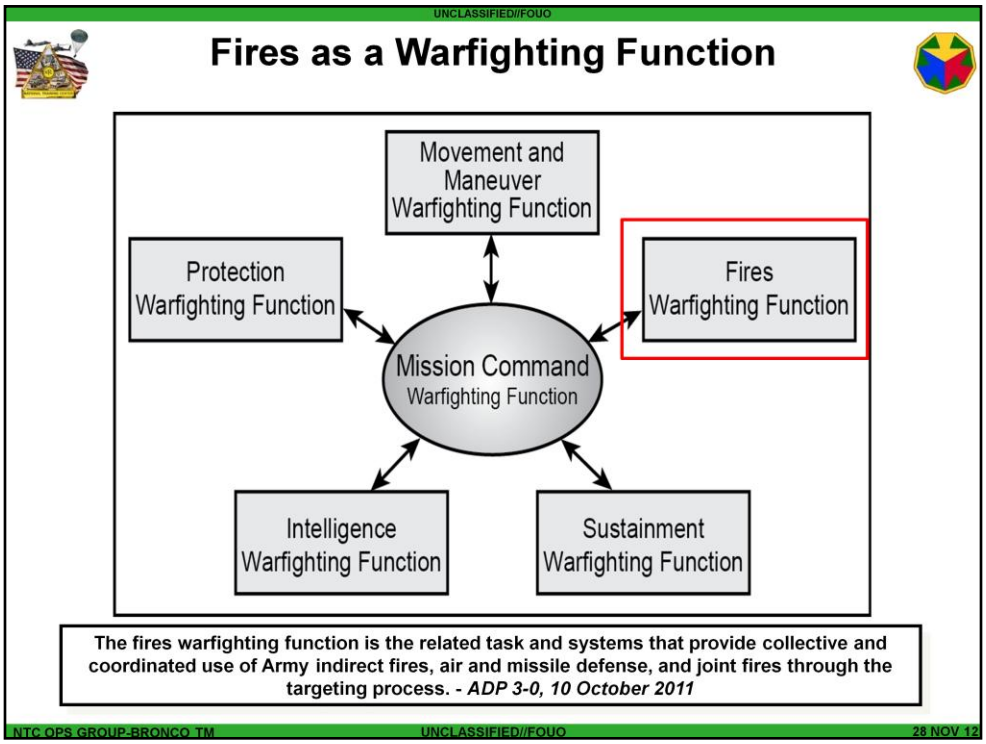

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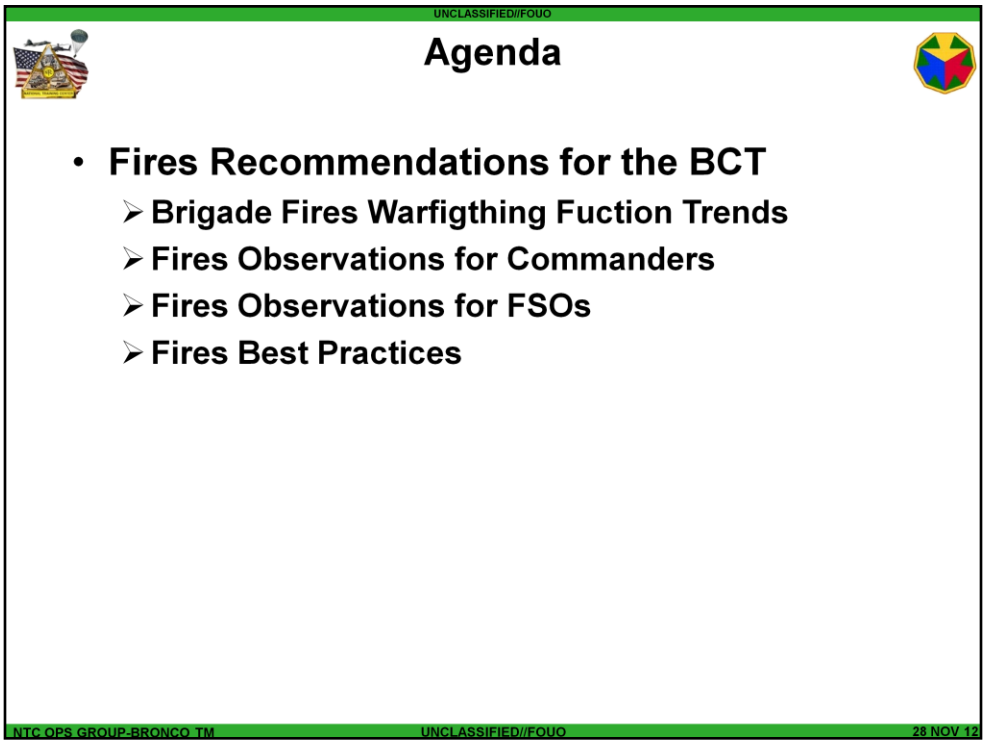

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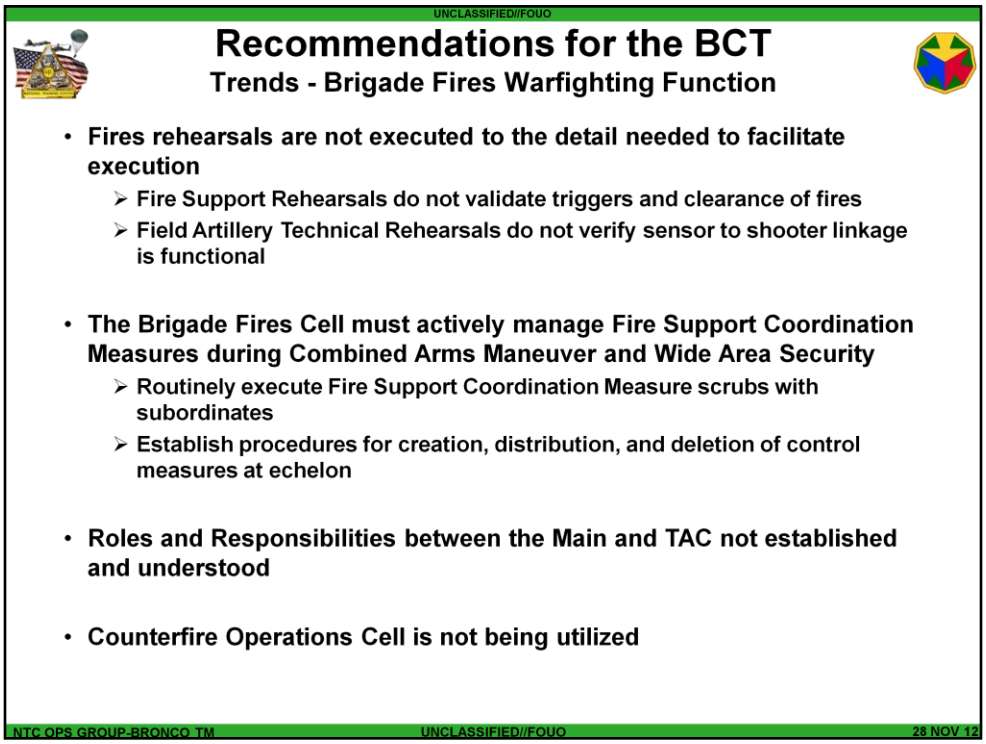

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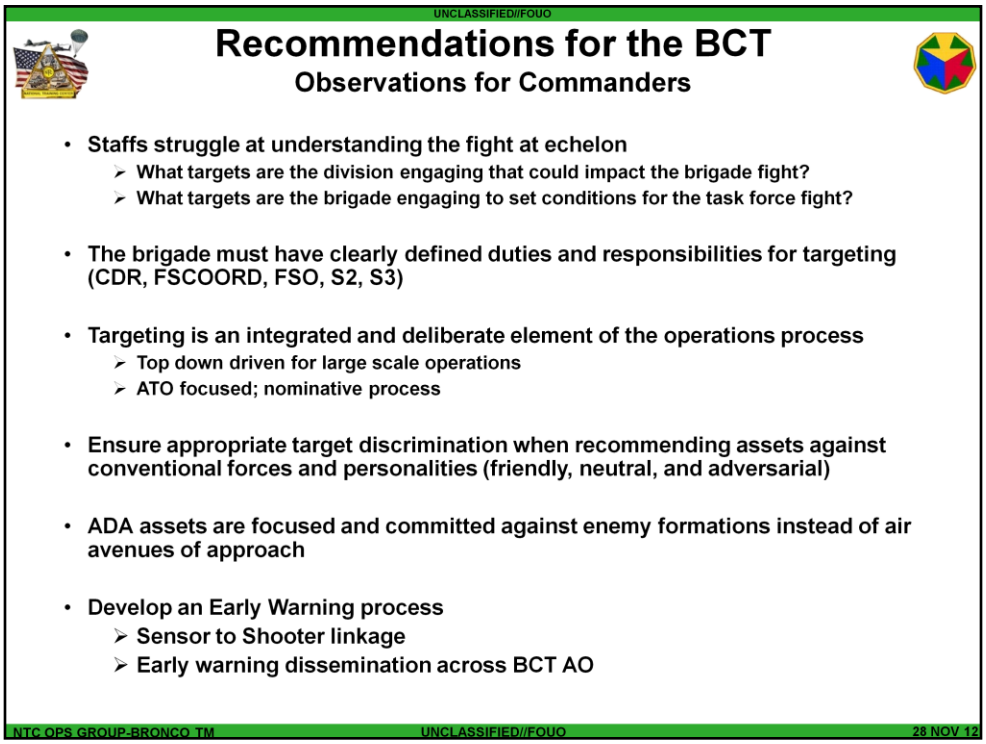
❑ For both the Fire Support Rehearsal and Field Artillery Technical Rehearsal to be effective they must be executed to the level of detail that allows for understanding and verification of all aspects of target engagement from sensor to shooter. All planned observers (COLTs, FISTs, UAS, RW, FW) must understand their target, trigger, and communication PACE for execution. All planned delivery assets (MTR, FA [DS, GSR, GS], RW, FW) must understand target data and firing orders. The mission command nodes at echelon (CO/BTRY/TRP, BN, BDE) between sensor and shooter must understand their responsibilities in facilitating target engagement. Clearance of fires procedures must be understood and rehearsed at echelon, vital to that is understanding of the airspace management plan.

❑ In order to ensure common operating picture with regard to Fire Support Coordination Measures (FSCM) the brigade must execute deliberate scrubs with their subordinate TFs on a routine basis. Critical is reconciling FSCMs prior to execution of FA Tech Rehearsals is support of Combined Arms Maneuver (CAM) operations and the real-time updating during operations. In support of Wide Area Security (WAS) brigade should execute a scrub on a set schedule. Procedures for creation, distribution, and deletion of FSCMs must be understood across the formation.

❑ Clearly defined roles and responsibilities between the Main and TAC allow us to effectively execute mission command and avoid duplication of efforts between the command nodes. During operations it is critical that there is common understanding at both nodes who is responsible for what and when. Examples - Counterfire Operations, Air Clearance, Coordination/Requests with DIV, Target Mensuration. Some of these responsibilities may be held at the Main due to (lack of) capabilities in the TAC, however clearly defining them allows for common understanding.

❑ The Counterfire Operations Cell is on the FA BN MTOE, but needs to reside at the Counterfire Headquarters, so if that is brigade that's where it needs to move to. The roles and responsibilities of the cell must be defined IOT avoid duplication of effort. Primarily the cell should be responsible for radar planning, IDF analysis, and management of the counterfire fight. The execution of these tasks must be incorporated with planning efforts in the BCT Fires Cell and FA BN.



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❑ At echelon we develop High-Payoff Targets (HPT) that successful engagement facilitates the accomplishment of the commander's mission. Our HPTs do not have to be nested and probably will be different between DIV, BDE, and TF. However, the brigade must understand what DIV is targeting and its impact on brigade operations, to include tasks brigade may be given to facilitate DIV target engagement (DIV assets TACON to BCT for movement/security to execute DIV HPT). Additionally at the brigade level the development of HPTs and their subsequent engagement should set conditions for the TF(s) fight. The brigade must look at its Task Org and Tasks to Subordinates WRT how it engages BDE HPTs (security/placement of brigade sensors - COLTs, Prophet, etc.).

❑ The brigade must have defined responsibilities with regard to targeting, the execution of a target is an operation and is the commander's responsibility, this cannot simply rest on the FSO and Targeting Officer, but must be a collaborative effort involving the entire staff, driven by the commander's guidance; whether executed within MDMP or as an outside effort.

❑ Targeting in Deceive Action is the purest form of D3A, where we are looking at Decide, Detect, Deliver, and Assess on a daily basis. Using the 72 hour Air Tasking Order (ATO) cutoff as a driving factor in determining our cycle, executing a 96 hour cycle every 24 hours is simplest. We must develop our targeting specific execution tools (High-Payoff Target List, Target Selection Standards, Attack Guidance Matrix) that will allow us to make rapid recommendations for decisions.

❑ Cannot forget about personality targeting, and understand that we are targeting friendly and neutral, not just adversarial. Brigade developed personality target can be actioned by the BCT or passed to TF.

❑ In order to maximize firepower, we must position where we believe the enemy will fly. This may not always lend itself to a neat task organization with Avengers in direct support of maneuver units, but an array of ADA forces that are focused on templated enemy Air Avenues of Approach (AAA). The BCT S2, with help from the ADAM must fully develop the "Air" IPB IOT to make sound recommendations to the CDR regarding placement of ADA Assets. This, however, must tie into the CDRs high value assets and protection priorities.

❑ Sentinel Radars are a key assets at the brigade commander's disposal, however must be managed carefully. Sentinel radars should be managed very similar to firefinder radars or retrans teams whereby BCT CDR retains positioning authority and Tactical control for these systems. Radars are an integral part of the sensor to shooter linkage for active engagement, however due early warning across the depth of the BCT AO must be developed to ensure units/Soldiers are able to employ Passive measures for protection.

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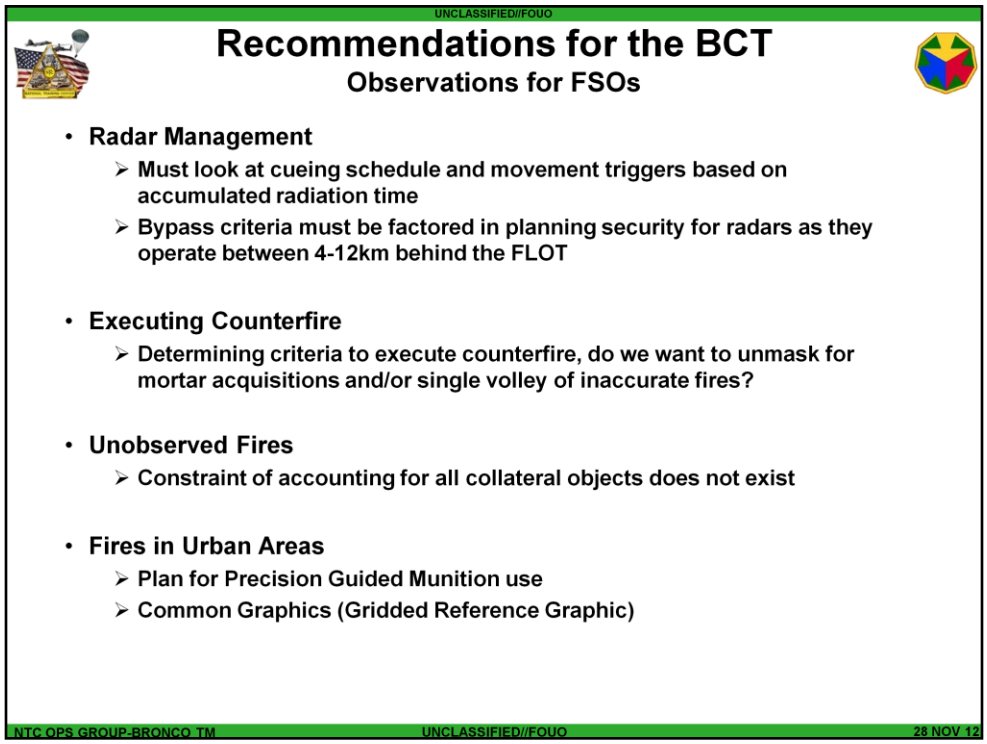
❑ The ability for the brigade to mass joint fires takes detailed planning with multiple agencies and the rehearsal of both the tactical and technical aspects. Understanding where the commander wants to mass fires in order to achieve a desired effect will drive all follow-on actions. In conjunction with the BCT S2 and the Intelligence Collection Matrix (ICM), the FSO should develop an observer plan that provides for sensor redundancy in order to detect both HPTs and facilitate where the commander wants to mass fires. Utilizing (Named Area of Interest (NAI) developed by the S2 to serve as triggers, the FSO should develop Targeted Areas of Interest (TAI) where our sensors are detecting a specified target to engage with a specified delivery asset. In conjunction with the ALO and BAO, the FSO must develop an airspace management plan that allows for rapid engagement of targets with indirect fires and provides ability to mass joint fires in predestinated areas with formal procedural controls The Fire Support Rehearsal when executed completely accounts for all primary and alternate observers for our targets and/or TAIs, rehearses their trigger to engage, and subsequent actions of the shooter. The FA Tech Rehearsal exercises the communication PACE from sensor to shooter, ensures no FSCM/ACM violations between shooters and target areas, and validates method of engagements. Example - COLTs should understand/exercise CFF during the FA Tech Rehearsal with Primary - FM Digital, Alternate - FM Voice BCT Fires NET, Contingency - FM Voice ARS Fires NET, Emergency - FM Voice TRP Fires NET.

❑ In order to ensure our detection and delivery assets are able to engage targets the FSO must communicate with the S3 when and where those assets need to be. Example - deploying COLTs in conjunction with the ARS and positioning a battery behind the ARS to engage brigade HPTs during the recon fight.

❑ Our HPTL, TSS, and AGM should be functional products in that we're able to execute operations off of, and provide the level of detail required to make recommendations and/or decisions.

❑ Must identify assets to collect Combat Assessments, whether that be imagery analysts, aerial platforms, or ground forces, in order to confirm or deny achievement of desired effects and subsequent actions.



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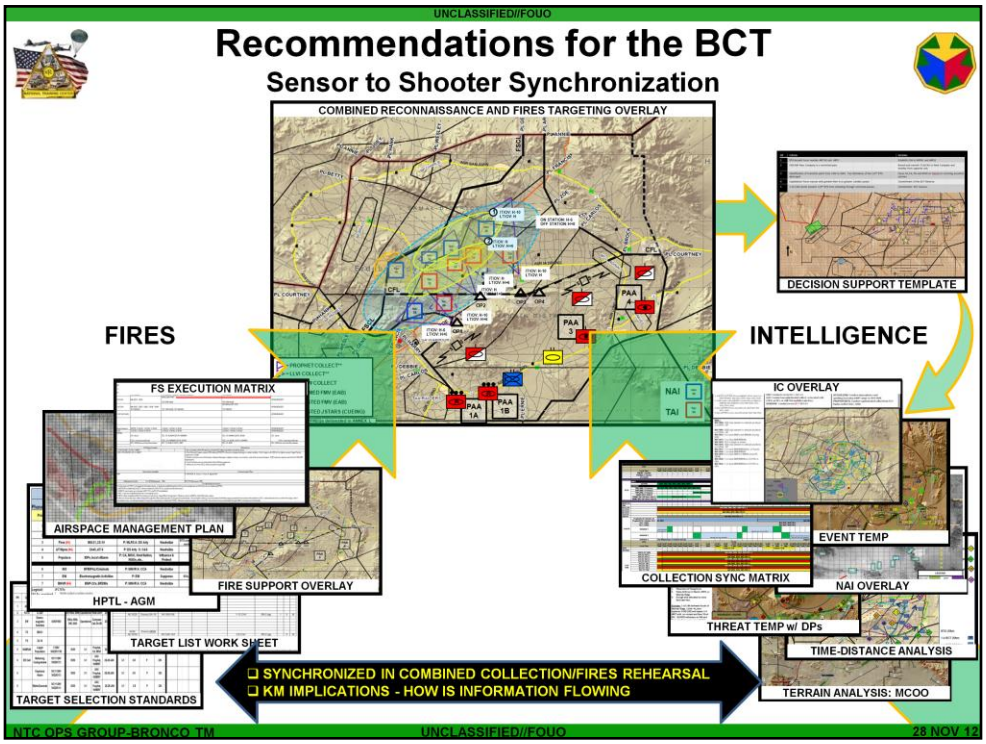
❑ We can't radiate 24/7 due to ELINT threat, so there is an inherent risk that you will not acquire all rounds fired. To mitigate that you can use a modified cueing schedule or use on-demand cueing.

• **Modified Cueing Schedule** - reduces the amount of down time due to survivability moves by not constantly radiating; 15/45 cueing schedule (15 seconds on, 45 seconds off), with 2xRadars you could be covered for 30/30 (30 on, 30 off)
• **On-Demand Cueing** - provides even greater time between survivability moves because the radar only radiates when units report receiving indirect fire. Must have a good comms architecture established

❑ Using tools like the RCS & Velocity Chart allows us to determine with near certainty the munition type and weapon system of acquired rounds. Based on this information and guidance provided in our combined HPTL, TSS, and AGM we can better decide when to execute counterfire.

❑ Collateral objects, like agricultural infrastructure, are not scrutinized like in COIN. Preparation Fires and Counterfire are a form of unobserved fires. Additionally fires may be unobserved IOT deceive, deny, and interdict.

❑ For the rapid employment of fires in an urban area we must set conditions for use of PGM with mensuration of structures and a common GRG across the formation. Additionally there must be an understanding of Risk Estimate Distance (RED) for munitions available and an ability to communicate that to decision makers. Must understand conditions (including threat) in determining appropriate munition.



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❑ One of the biggest challenges we have seen for units is the ability to maximize the use of their Collection systems to shape the fight out of direct fire contact. The myriad systems that we have at the Brigade and higher level to collect, cross-cue and confirm or deny SITEMPs greatly increases or lethality in shaping with joint fires as part of the Division Close and Brigade Deep fights.

❑ The sensor to shooter linkage is imperative to maximize our capabilities, synchronize our collectors and manage our resupply of internal fires IOT maintain capability for the Brigade Close fight. At the Brigade level, we have observed challenges with developing products within individual WfF. Units must develop mechanisms and systems to share information and develop collaborative products. This can be achieved in MDMP, targeting or other synchronization meetings both face to face and distributive. The responsibility for the developing the CRAFT-Overlay is the S3 but a majority of the inputs come from the Fires and Intel sections.

❑ On the intelligence side, a good foundation for sensor-to-shooter linkages rests upon understanding how the enemy will make use of terrain. Applying a time-distance analysis to that terrain based on best estimate of vehicle movement rates should allow for a decent development of an enemy SITEMP that can drive wargaming and collection planning. Working in conjunction with the FSO, the S2 and Collection Manager must develop the collection plan complete with NAIs and TAIs-focused on finding gaps in the Commanders understanding of the enemy (and ideally focused on templated enemy decision points). By overlaying the multiple COAs on the terrain with both NAIs and time-distance analysis, the S2 can execute the wargame and develop a good information collection overlay and collection sync matrix- two tools that should drive the rehearsals process and set the conditions for good control of sensor to shooter linkages by the mission command posts.

❑ For the fires side, synchronization and cross-talk is key. Critical to synchronizing target engagement is the development of fire support and targeting products ICW MDMP that will define what we engage and how we engage it. These products (FSEM, FS Overlay, TLWS, combined HPTL/TSS/AGM) should serve as execution tools that allow us to make decisions rapidly. IOT achieve this product development the Fires Cell must work closely with the S2 Section to:

1. Create Targets (specific equipment types, templated locations)
2. Understand where we are determining enemy COA (NAIs) and provide input for collection efforts
3. Establish TAIs tied to NAIs, these TAIs are supported by the collection plan
4. Develop an observation plan that supports TAIs and associated NAIs

❑ Both the Fires Cell and S2 Section must ensure that the S3 understands required asset/unit movement and is subsequently integrated into the task org, scheme of maneuver, and tasks to subordinates as appropriate.

❑ Through the FS and FA Tech Rehearsals we validate our observation plan, engagement triggers, and exercise our communication PACE. Critical again is the coordination and understanding between the Fires Cell, S2, and S3 at echelon IOT to synchronize all sensors (COLTs, FIST, UAS, RW, FW, PROPHET, etc.) and shooters (MTR, FA, UAS, RW, FW, EW).

❑ Best Practices:

Units must develop and maintain a battle rhythm that foster collaboration and synchronization between the staff. This can be accomplished during Staff sync meetings, Targeting Meetings, Staff Updates to the Commander, MDMP (MA, COA Dev, Wargaming). Units KM must facilitate the sharing of information and products both over Upper T/I through the use of the Portal and CPOF, but also over lower T/I with overlays on FBCB2/BFT, analog and face to face.

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Recommendations for the BCT
Airspace Management

- **Airspace Planning must be deliberate and executed in conjunction with the brigade's MDMP**
  - Account for all airspace users (RW, FW, UAS, FA, ADA)
  - Understood and executable down to lowest level
  - Integrated into rehearsals (Fires/CAR)

- **Airspace Management is an ongoing process that must be understood at echelon**
  - Air Coordination Order received, understood, and disseminated with ABCS
  - Current operations - Battle Tracking & Running Estimates
  - Knowledge management - common graphics and airspace control measures disseminated throughout brigade
  - Procedural vice positive control of aircraft - defining roles and responsibilities (ADAM/BAE, Fires Cell, ALO, G3 Air, BDE S2 & S3, Aviation TF S3) in a collaborative environment
- **Air Assault Operations require at a minimum air movement plan, landing plan, and ground tactical plan**

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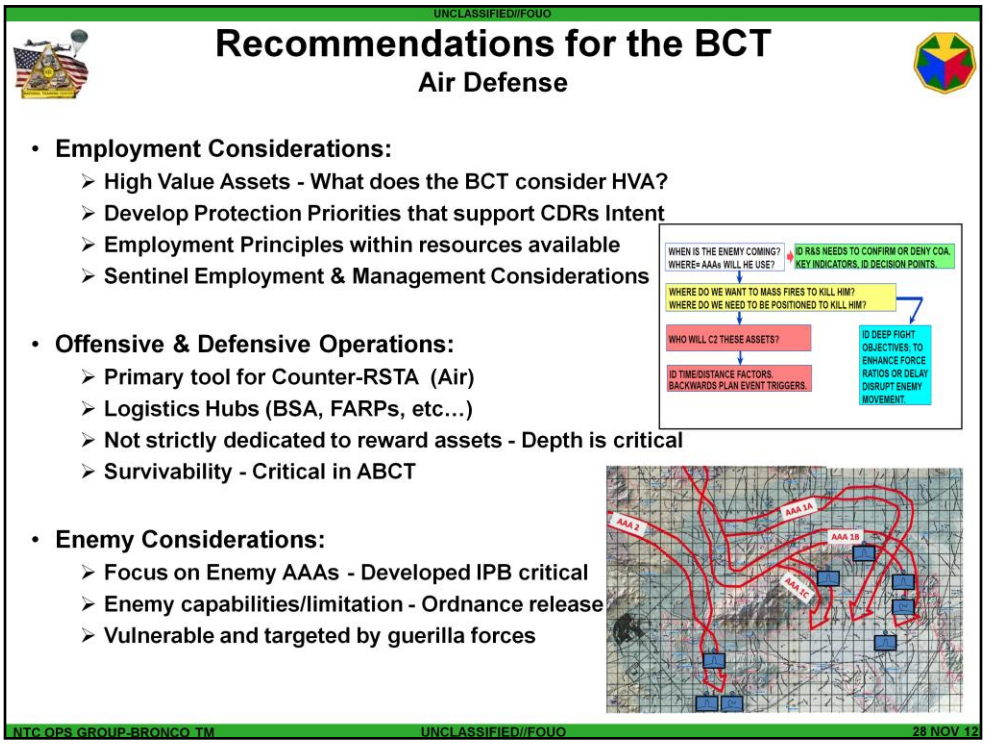
❑ Air Space Management in terms of current operations is critical to the success of the BCT. More often than not we find that ADAM/BAE cells have manning issue prior to deployment and seldom have the opportunity to implement processes for successful current operations. Many units have not established a Battle Rhythm, Running estimates, shift changes, or SOPs. Units are developing and implementing these at the NTC rather than refining products.

❑ Understanding the difference between procedural and positive control of airspace users can often be the mark of success or failure of a unit. It is not necessary to establish numerous procedural controls so long as all players understand the methods of controlling the airspace. This can only be achieved, however, through collaborative preparation and planning with all users. The units that are most effectively utilize airspace to employ all available assets typically plan and rehearse as team of airspace users (Aviation TF, Fires Cell, ALO, etc…).

❑ Air space management starts with planning. Planning must occur as part of the wider BCT MDMP. Many observed units attempt to create airspace plans after receiving the ground tactical plan from the BCT Planners. This causes a "stove pipe" in collaboration with multiple airspace users and desynchronization of assets. A firm understanding of the maneuver plan can only be achieved through participation in the MDMP. Aviation TFs are often caught in the need for the ground tactical plan before airspace mentality. This is usually true for helicopter pilots conducting mission planning, however BCT level airspace planning is more than this. Consider the following questions when planning:

1. Does the commander want freedom of fires or freedom of maneuver for aviation?
2. What is the CDRs intent for Army Attack Aviation?
3. What Fires assets are to be employed? When? Who has priority for Fires? Max ord of Fires?
4. What assets are available? Lift? Attack? Scout?
5. What CAS is available? Windows? What airspace considerations?
6. How do we get from AAA to ABFs? Air Corridors?



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❑ High Value Assets. First identification of High Value assets is larger than ADA, however understanding these is critical to recommending protection priorities. Realizing that Air Defense is finite resource and likely cannot protect every High Value Asset, priorities are essential.

❑ Sentinel Radars are a key assets at the brigade commander's disposal, however must be managed carefully. Sentinel radars should be managed very similar to firefinder radars or retrans teams whereby BCT CDR retains positioning authority and Tactical control for these systems. Radars are an integral part of the sensor to shooter linkage for active engagement, however due early warning across the depth of the BCT AO must be developed to ensure units/Soldiers are able to employ Passive measures for protection.

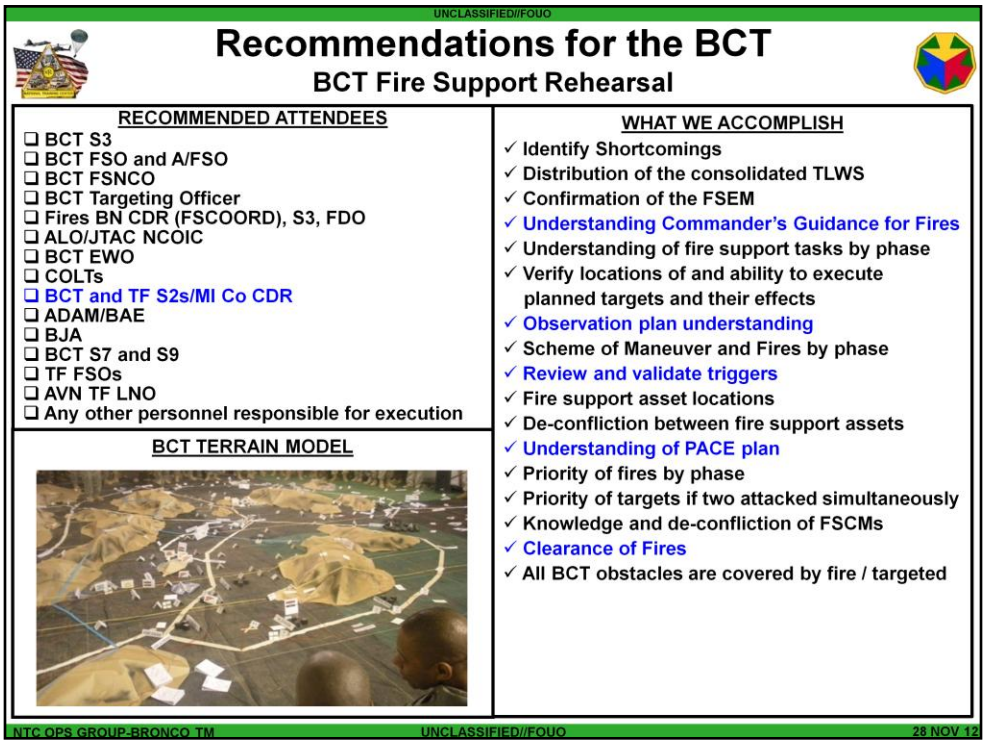
❑ Employment principles *(Mutual Support, Overlapping Fires, Balanced Fires, Weighted Coverage, Early Engagement & Defense in Depth)*. Planners must consider all of these principles to achieve desired effects and some tactical risk will be assumed based on capabilities. For example, if the Commanders wants to weight coverage forward, then some risk will be assumed in rear areas and BCT will have limited resources to provide protection in depth.

❑ Survivability. Simply put, Avengers and Sentinels are not armored capabilities, therefore special considerations have to be applied when maneuvering ISO of Armored Formations. Consider the following:

1. In the defense, priority for dig assets.
2. Where are these positioned on the Battle Field to maximize fire power and protection?
3. How do we maneuver these assets in the offense?
4. Dismount with scouts for early engagement?
5. Assume risk with forward elements in the offense?
6. Consider security risks from guerilla forces?

❑ Enemy considerations. In order to maximize firepower, we must position where we believe the enemy will fly. This may not always lend itself to a neat task organization with Avengers in direct support of maneuver units, but an array of ADA forces that are focused on templated enemy Air Avenues of Approach (AAA). The BCT S2, with help from the ADAM must fully develop the "Air" IPB IOT to make sound recommendations to the CDR regarding placement of ADA Assets. This, however, must tie into the CDRs high value assets and protection priorities.

❑ Lastly, the ADAM OIC is critical to the integration of Air Defense Assets into the BCT. As an air space user, Air Defense capabilities must exist within the wider Air Space Management plan similar to that of fires.



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❑ The synchronization and employment of fires is essential to the success of brigade formations. As noted in the list of recommended attendees it is critical to have brigade operations representation. The Brigade S3 is necessary to ensure that fires enables the brigade's maneuver and the brigade's maneuver plan enables fires for the BCT Commander's fire support tasks and those of higher echelon commanders.

❑ Failure to rehearse key events/tasks typically results in poor synchronization of assets and an inability to effectively integrate Fires into the Operation. In a time constrained environment it is imperative that common understanding exists at echelon with regards to duties and responsibilities when attending a rehearsal, so a standardized script that outlines areas to covered that is distributed and understood is essential. This overarching document establishes the foundation that we can adjust off based on the conditions under which we can rehearse. **It is not enough to brief your plan, events must be rehearsed to indentify points of friction and achieve synchronization.**

❑ In addressing attendees to the FS Rehearsal the MI Co CDR and/or BCT Collection Manager are essential with the numerous sensors that reside in the Intel Warfighting Function (IWfF). Establishing the linkage of typically IWfF managed collection assets (UAS, Air and Ground Based SIGINT, and other ISR platforms) must happen in order to develop a complete observation plan with synchronized coverage and redundancy. A FS Rehearsal on a terrain model allows us to see this and validate it in space and time.

❑ Understanding the key events/tasks we must rehearse in order to be successful allows us to make better use of our time. **In simple terms we must rehearse actions on the objection in a time constrained environment.** These key events/tasks are:

1. Understanding Commander's Guidance for Fires - in order to meet the Commander's Intent there must be common understanding of how he wants to employ fires and what effects he wants to achieve.
2. Observation Plan understanding - we have to know what we're looking for, where we're looking for it, and who is looking.
3. Review and Validatation of Triggers - understanding where and when we engage targets and ensuring that our triggers are adequate over time and space.
4. Understanding of PACE Plan - if we cannot communicate we will not be effective.
5. Clearance of Fires - understanding of actions required to clear indirect fires at echelon, to include an understanding of the airspace management plan.

References: FM 3-09 Fire Support (NOV 11), Field Artillery School White Paper: Fire Support Planning for the BCT and Below (DEC 08)

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❑ Just like the FS Rehearsal, the FA Tech Rehearsal facilitates the synchronization of assets and the ability to effectively integrate Fires into the Operation. A standardized script allows for common understanding of duties and responsibilities at echelon and provides flexibility in a time constrained environment.

❑ Again the BCT Collection Manager must be integrated in order to ensure synchronization of IWfF managed collection assets.

❑ Understanding the key events/tasks we must rehearse in order to be successful allows us to make better use of our time. **In simple terms we must rehearse actions on the objection in a time constrained environment.** These key events/tasks are:

1. Database Verification for Fire Support Digital Systems - AFATDS at echelon must execute an FSCM scrub to ensure current and future (planned) control measures are accounted for, to include Airspace Control Measures.
2. Exercise and Understanding of PACE plan from Sensor to Shooter - this is our opportunity to verify our communication systems and make any adjustments prior to LD.
3. Rehearsal of Clearance of Fires - allows us to exercise our clearance of fires procedures and determine any points of friction with our FSCMs and ACMs.

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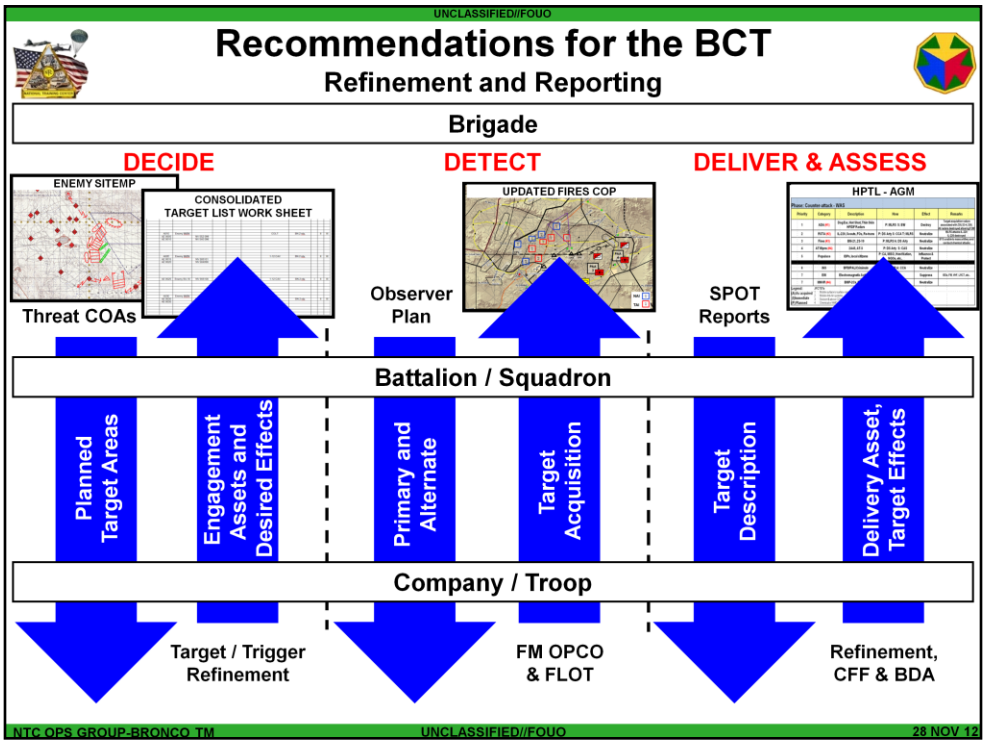

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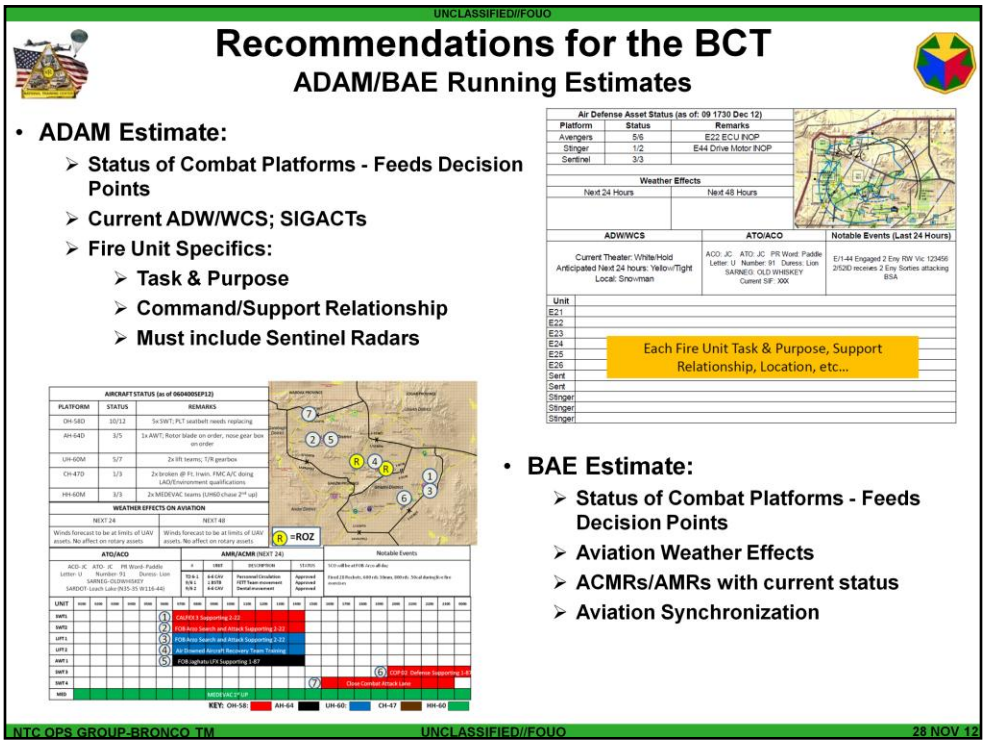
❑ Defining at echelon reporting requirements is essential for effective employment of fires. Within the context of the Army Targeting Process, D3A, the required dialog (refinements and reporting) between echelons necessitates an established standard that clearly defines format and timing. Example - OP locations are reported within 15 minutes of occupation, FLOTs are reported every 15 minutes while moving, or 30 minutes when stationary.

❑ Operations in Decisive Action are typically driven from the top down, but require bottom up refinement especially with regards to fires planning. As fires planning is a constant process, even after LD, reporting from the lowest level is critical to enable timely recommendations and decision making. In order to facilitate this, brigade must clearly define its information requirements, to include not only the what, but the how and when they need to receive information. This will assist TFs in defining their information requirements to their subordinates.



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❑ For units with a supporting Air Defense unit, we recommend separating the ADAM/BAE estimates into 2 documents, simply because there is too much data to effectively develop a single estimate. For units without a supported Air Defense element, then a single document can be used with elements of both incorporated (ie. Including the current Air Defense Warning into the BAE running estimate).

❑ Status of Combat Platforms, particularly Aviation assets and Sentinel Radars is critical and will likely feed into a decision regarding repositioning of assets to support the Commander's Concept of Operation.