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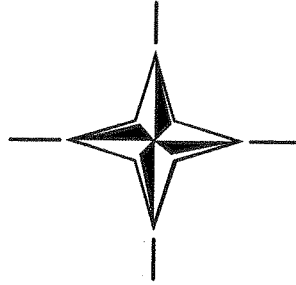
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STANAG 3596
(Edition 5)

**NORTH ATLANTIC TREATY ORGANIZATION
(NATO)**



**NATO STANDARDIZATION AGENCY
(NSA)**

STANDARDIZATION AGREEMENT
(STANAG)

SUBJECT: AIR RECONNAISSANCE REQUESTING AND TARGET
REPORTING GUIDE

Promulgated on 24 September 2003

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Rear Admiral, NONA
Director, NSA

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RECORD OF AMENDMENTS

No.	Reference/date of Amendment	Date Entered	Signature

EXPLANATORY NOTES

AGREEMENT

1. This NATO Standardization Agreement (STANAG) is promulgated by the Director NATO Standardization Agency under the authority vested in him by the NATO Standardization Organisation Charter.
2. No departure may be made from the agreement without informing the tasking authority in the form of a reservation. Nations may propose changes at any time to the tasking authority where they will be processed in the same manner as the original agreement.
3. Ratifying nations have agreed that national orders, manuals and instructions implementing this STANAG will include a reference to the STANAG number for purposes of identification.

RATIFICATION, IMPLEMENTATION AND RESERVATIONS

4. Ratification, implementation and reservation details are available on request or through the NSA websites (internet <http://nsa.nato.int>; NATO Secure WAN <http://nsa.hq.nato.int>).

FEEDBACK

5. Any comments concerning this publication should be directed to NATO/NSA – Bvd Leopold III - 1110 Brussels - BE.

NATO STANDARDIZATION AGREEMENT
(STANAG)

AIR RECONNAISSANCE REQUESTING AND TARGET REPORTING GUIDE

- Annexes: A. Damage assessment guide
B. Examples of target type, function, subordination, primary and support facilities.

Related Documents:

ATP-26	AIR RECONNAISSANCE INTELLIGENCE REPORTING –NOMENCLATURE
ATP-27	AIR INTERDICTION AND CLOSE AIR SUPPORT
ATP-34	TACTICAL AIR SUPPORT FOR MARITIME OPERATIONS (TASMO)
AAP-6	NATO GLOSSARY OF TERMS AND DEFINITIONS (ENGLISH & FRENCH)
STANAG 3277 AR	AIR RECONNAISSANCE REQUEST/TASK FORM
STANAG 3377 AR	AIR RECONNAISSANCE INTELLIGENCE REPORT FORMS

AIM

1. The aim of this agreement is to serve as a reference for the requesting, planning and reporting of intelligence from air reconnaissance.

Note: This agreement is appropriate to all sensor types and platforms.

AGREEMENT

2. Participating nations agree to:
- Use, as appropriate, the items specified for each category and 'Coded Statement of Purpose'. Item 7 may be used within any category and 'Coded Statement of Purpose'.
 - Include a 'Coded Statement of Purpose', as defined below, in every reconnaissance mission request, which is to follow the Category number (for example Cat 01A):

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Code	Purpose	<u>Items Reported</u>
A	New Target	All except item 6.
B	Change Detection / Surveillance – Reporting baseline must be specified and be available to the reporting unit.	Items 1,2,3,4 plus any other items requested.
C	Planning.	Item 1 plus any other items requested
D	Damage Assessment	Items 1,2,3,6 plus any other items requested.

Examples:

(1) Target CAT 01A

This request refers a new target, in the AIRFIELDS category. Items 1, 2, 3, 4, and 5 are to be reported.

(2) Target CAT 01B ref: 02B514 23 Jan 98

This request is for change detection/surveillance of a target in the AIRFIELDS category. Items 1, 2, 3 and 4 are to be reported if a change occurred since mission 02B514 dated 23 Jan 98. If no change occurred within an item, then 'No Change' must be written for this item.

(3) Target CAT 01C+4

This example specifies that items 1 and 4, of the AIRFIELDS category, must be reported, to provide the intelligence for higher level planning.

(4) Target CAT 01D

This request is for damage assessment on a target in the AIRFIELDS category. Items 1, 2, 3 and 6 are to be reported.

(5) Target CAT 13A + 5 a. dimension

This example specifies that this request refers to a new target, in the WATER CONTROL FACILITIES category. Items 1, 2, 3, 4 and 5 must be reported. The report must include the dimensions of the primary structures.

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- (6) Target CAT 03A + 5 b. terrain
This example specifies that this request refers to a new target, in the ELECTRONIC INSTALLATIONS category. Items 1, 2, 3, 4 and 5 must be reported. The report must include the description of the terrain in the vicinity of the target.

Item 1 a. 'CONFIRMED LOCATION' recommended location format is UTM and datum is WGS 84.

Item 7 'Analyst's Comments' is used at the analyst's own initiative. (For example: in Category 6, it allows him to report that the tasked coordinates are not in the correct geographic datum.) Any important information can be added to the report with the use of item 7.

3. Annex A is the reference for Item 6 in every category.
4. Annex B lists examples of type, function, nature, subordination, primary and support facilities for each category.
5. This STANAG shall be used in accordance with referenced documents listed on page 1.

IMPLEMENTATION OF THE AGREEMENT

6. This STANAG is implemented when a nation has issued the necessary orders/instructions to its forces putting the procedures detailed in this agreement into effect.

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Target Category List1

- 01 AIRFIELDS
- 02 MISSILES and ARTILLERY SYSTEMS
- 03 ELECTRONIC INSTALLATIONS
- 04 MILITARY HEADQUARTERS and BARRACKS
- 05 STORAGE AND REPAIR INSTALLATIONS
- 06 MILITARY ACTIVITY
- 07 OBSTACLE CROSSING
- 08 SHIPPING
- 09 ROUTE RECONNAISSANCE
- 10 TERRAIN RECONNAISSANCE
- 11 COASTAL RECONNAISSANCE
- 12 BRIDGES
- 13 WATER CONTROL INSTALLATIONS
- 14 PORT INSTALLATIONS
- 15 RAIL INSTALLATIONS
- 16 INDUSTRIAL INSTALLATIONS
- 17 POWER INSTALLATIONS
- 18 URBAN AREAS / HABITATION
- 19 **SPECIFIC STRUCTURE**

1 Categories 18 and 19 will give the tasker and analyst a means to task and report areas and facilities not covered by Categories 1 to 17, whereby category 18 is a means to give a general description of habitated areas, and category 19 is a means to define specific structures within those areas.

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CATEGORY 01: AIRFIELDS

1. Location and Type:

- a. CONFIRMED LOCATION: (Example: WGS 84 31UTM45763214)
- b. TYPE: Military / Civilian / Mixed / Unknown
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Airbase, Bomber, Naval)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, state of readiness for each item:

(Example: Main Parking Apron, 02, Bomber, Backfire B, engines running)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence: (Example: 31UTM45763214, 06, AAA, S60)**
- b. **Surface: (Example: 030 100m RP, Defensive Positions)**
- c. **Passive Defence: (Example: SW Dispersal, Fence Secured)**

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities: Include orientation, dimensions and materials for operating surfaces.
(Example: Single runway 09/27, 2000m, 35m, concrete, with parallel taxiway, 1500m, 25m, concrete)
- b. Support Facilities.
(Example: 300m SW RP, 01, ATC Tower)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Destroyed, confirmed single weapon impact point 15m from DMPI 101. Smoke visible from impact point and air vents.)
- b. Functional Damage:
(Example: Building probably functionally destroyed. 4 fire trucks and 5 ambulances at North end of building.)
- c. Collateral Damage:
(Example: Probable weapon impact point in road 200m E of bunker. Road traffic able to by pass the crater.)

7. Analyst comment:

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CATEGORY 02: MISSILES and ARTILLERY SYSTEMS

1. Location and Type:
 - a. CONFIRMED LOCATION:
 - b. TYPE: Military / Civilian / Mixed / Unknown
 - c. FUNCTION, NATURE & SUBORDINATION: (Example: Guns, Towed Artillery, Regimental)
2. Status:
 - a. DEPLOYMENT: Permanent / Temporary / Unknown
 - b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
 - c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
 - d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
 - e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
 - f. CONSTRUCTION: Under Construction / Modified / None Observed
 - g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed
3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34MGR56783426, 08, Towed Guns, 155TRF1, NNW, fire position)
4. Defence: Report location, number, function, type for each item:
 - a. **Local Air Defence**
(Example: 34MGR56603432, 02, AAA, CN 20)
 - b. **Surface**
(Example: 030 100m RP, Defensive Positions)
 - c. **Passive Defence**
(Example: None observed)

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: None observed)
- b. Support Facilities:
(Example: 34MGR57603132, 01, Ammo Logistics Area)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Probably destroyed, confirmed single weapon impact point 15m from DMPI 101.)
- b. Functional Damage:
(Example: 02 Guns probably destroyed.)
- c. Collateral Damage:
(Example: Probable weapon impact point in road 200m East of RP. Road traffic able to by pass the crater.)

7. Analyst comment:

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CATEGORY 03: ELECTRONIC INSTALLATIONS

1. Location and Type:
 - a. CONFIRMED LOCATION:
 - b. TYPE: Military / Civilian / Mixed / Unknown
 - c. FUNCTION / NATURE/ SUBORDINATION: (Example: Communication, Troposcatter, Army)
2. Status:
 - a. DEPLOYMENT: Permanent / Temporary / Unknown
 - b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
 - c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
 - d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
 - e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
 - f. CONSTRUCTION: Under Construction / Modified / None Observed
 - g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed
3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 31UTM45743211, 04, Tropo, Twin Plate, LOS, NE and SW, deployed)
4. Defence: Report location, number, function, type for each item:
 - a. **Local Air Defence**
(Example: 31UTM45763214, 06, AAA, S60)
 - b. **Surface**
(Example: 030 100m RP, Defensive Positions)
 - c. **Passive Defence**
(Example: Barbed Wire protected)

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: At RP, 01, Rectangular Single Storey Control Building)
- b. Support Facilities:
(Example: None observed)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: No damage).
- b. Functional Damage:
(Example: Probable no functional damage.)
- c. Collateral Damage:
(Example: Confirmed weapon impact point in road 200m East of RP.)

7. Analyst comment:

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CATEGORY 04: MILITARY HEADQUARTERS and BARRACKS

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: (Example: Air Force)
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Aviation, HQ, Air Division)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34MGR56783426,06, Box body trucks, parked in the open)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence:**
(Example: 34MGR56763446, 01, SAM, Probable Stinger Post on barn roof)
- b. **Surface:**
(Example: Defensive Positions surrounding site)
- c. **Passive Defence:**
(Example: Double fence protected)

5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: 34MGR56803430, earthcovered headquarter bunker, 04 entrances)
- b. Support Facilities:
(Example: 34MGR56703410, 06, Administration Buildings)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Probable damage, cluster bomb scarring throughout target area)
- b. Functional Damage:
(Example: Administration building severe functionnal damage)
- c. Collateral Damage:
(Example: 500m. North of R.P. Farm buildings moderate damage. No damage to mosque)

7. Analyst comment:

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CATEGORY 05: STORAGE and REPAIR INSTALLATIONS

1. Location and Type:
 - a. CONFIRMED LOCATION:
 - b. TYPE: Military / Civilian / Mixed / Unknown
 - c. FUNCTION / NATURE/ SUBORDINATION: (Example: Storage Area, POL, Army)
2. Status:
 - a. DEPLOYMENT: Permanent / Temporary / Unknown
 - b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
 - c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
 - d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
 - e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
 - f. CONSTRUCTION: Under Construction / Modified / None Observed
 - g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed
3. Equipment and Activity: Report location, number, function, type, outloading for each item:

(Example: 34MGR56783426, 02, Bulldozer, preparing ground and building revetment)
4. Defence: Report location, number, function, type for each item:
 - a. **Local Air Defence**
(Example: 34MGR56033439, 06, AAA, S60)
 - b. **Surface**
(Example: 030 100m RP, Defensive Positions)
 - c. **Passive Defence**
(Example: Barbed Wire protected)

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5. Facilities / Description: Report location, number, function, type for each item:
 - a. Primary Facilities: include capacity if possible
(Example: In West Storage Area, 06, 30m diameter, Semi Buried POL Tanks)
 - b. Support Facilities:
(Example: 150m North of RP, 01, Rail Transhipment Point with 04 loading racks)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.
 - a. Physical Damage:
(Example: Probable destroyed, target smoked obscured.)
 - b. Functional Damage:
(Example: Probably functionally destroyed. Smoke prevent further analysis.)
 - c. Collateral Damage:
(Example: None observed)

7. Analyst comment : (Example: Recommend further BDA tasked when fires extinguished.)

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CATEGORY 06: MILITARY ACTIVITY

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Military / Mixed / Unknown
- c. **FUNCTION / NATURE/ SUBORDINATION: (Example: Cavalry, Armour, Major Elements of a Tank Bn)**

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34MGR56783426,30, MBT, T 72, heading NNW, in 3 columns)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence:**
(Example: 34MGR56783426, 04, SPAD, 2S6, all around defence)
- b. **Surface:**
(Example: None observed)
- c. **Passive Defence:**
(Example: None observed)

5. Facilities / Description: Report deployment for each item:

- a. Primary Facilities:
(Example: Mobile in the open)
- b. Support Facilities:
(Example: Not tasked)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Confirmed Single MBT destroyed, observed 20m below the road on its side.)
- b. Functional Damage:
(Example: 01 MBT functionaly destroyed, 01 ARV BREM 1 conducting recovery operation.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:

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CATEGORY 07: OBSTACLE CROSSING

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Military / Civilian / Mixed / Unknown
- d. FUNCTION, NATURE & SUBORDINATION: (Example: Ferry, Amphibious, Divisional)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, state of readiness for each item:

(Example: 34MGR67543890, 02, Amphibious Ferry, PMM 2, conducting ferry operations)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: 34MGR67243870, 06, SPAD, 2S6)
- b. **Surface**
(Example: South of Crossing Point on West bank, Probable Mine Field)
- c. **Passive Defence**
(Example: None observed)

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: 34MGR67213873, prepared bank with serviceable road access to the East of crossing)
- b. Support Facilities:
(Example: 34MGR67213873, refuelling area)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Confirmed destroyed PMP sections 400m down stream on sand bank.)
- b. Functional Damage:
(Example: Confirmed severe functional damage. 02 PMM 2 now conducting crossing operations. T55 T2 attempting recovery of PMP sections.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:

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CATEGORY 08: SHIPPING

1. Location and Type:

- a. **CONFIRMED LOCATION:**
- b. **TYPE:** Military / Coast Guard / Civilian / Mixed / Unknown
- c. **FUNCTION / NATURE/ SUBORDINATION:** (Example: Combatant, Probable Amphibious Assault convoy,TU)

2. Status:

- a. **DEPLOYMENT:** Not applicable
- b. **SERVICEABILITY:** Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. **OCCUPATION:** Occupied / Partly Occupied / Unoccupied / Unknown
- d. **CAPABILITY:** Operational / Partly Operational / Non operational / Decoy / Unknown
- e. **HARDENING:** Not applicable
- f. **CONSTRUCTION:** Under Construction / Modified / None Observed
- g. **CAMOUFLAGE:** Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, heading, estimated speed, formation, state of readiness for each item:

(Example: 502036N0035600W, 01, LPD Ivan Rogov, Not Standard for Class, 030, 10 Kts, centre of convoy)

4. Defence: Report weapons, number, type and location if not standard for Class

- a. **Local Air Defence:**
(Example: LPD Ivan Rogov, 01, SAM, SA 8 TELAR, deployed on the rear heli deck)
- b. **Surface:**
(Example: None Observed)
- c. **Passive Defence:**
(Example: None Observed)

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5. Facilities / Description: Report modifications, location, number, function if not standard for Class:

- a. Primary Facilities:
(Example:LPD Ivan Rogov, 01, Air Warning radar TOP PLATE, at mast head)
- b. Support Facilities:
Not applicable

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: LPD Ivan Rogov confirmed severe damage, ship listing 10° port. Smoke from helicopter hangar.)
- b. Functional Damage:
(Example: LPD Ivan Rogov falling behind the convoy. Fire fighting teams and hoses on forward deck.
- c. Collateral Damage:
(Example: None Observed)

7. Analyst comment:

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CATEGORY 09: ROUTE RECONNAISSANCE

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Railway / Roadway / Waterway
- c. FUNCTION / NATURE/ SUBORDINATION: (Example: Two lanes, Mountain road)

2. Status:

- a. DEPLOYMENT: Not applicable
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Not applicable
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged /Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: Immediately SW Start Point, 53, Trucks, Facing NE, stopped and blocking the road at VCP)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: Along the route on high ground, numerous, AAA positions, unoccupied)
- b. **Surface**
(Example: Along South side of road, numerous defence positions, unoccupied)
- c. **Passive Defence**
(Example: On South side of road, 3m deep drainage ditch)

5. Facilities / Description: Report location, number, function, type, serviceability for key points:

- a. Primary Facilities:
(Example: 34MGR63203825, 01, choke point 500m long single lane bridge, serviceable)
- b. Support Facilities:
(Example: 34MGR63153821, 01, rest area, serviceable)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Confirmed land slide at 34MGR62313678, 75m blocked)
- b. Functional Damage:
(Example: Confirmed road closed at 34MGR62313678. Bulldozer in operation at East end of road block.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:

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CATEGORY 10: TERRAIN RECONNAISSANCE

1. Location and Type:
 - a. CONFIRMED LOCATION:
 - b. TYPE: Terrain
 - c. FUNCTION / NATURE/ SUBORDINATION: (Example: Lowland, Marshland and open terrain)

2. Status:
 - a. DEPLOYMENT: Not applicable
 - b. SERVICEABILITY: Not applicable
 - c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
 - d. CAPABILITY: Not applicable
 - e. HARDENING: Not applicable
 - f. CONSTRUCTION: Not applicable
 - g. CAMOUFLAGE: Not applicable

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34MGR63153821, 02, Gunship Helicopter, Hind, refuelling)

4. Defence: Report location, number, function, type for each item:
 - a. **Local Air Defence:**
(Example: 34MGR63153821, 01, SAM, SA 5 Complex serviceable, unoccupied)

 - b. **Surface:**
(Example: 34MGR63153821,05, unoccupied tank scrapes)

 - c. **Passive Defence:**
(Example: None observed)

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5. Facilities / Description: Report location, number, function, type, serviceability and suitability for operation:

- a. Primary Facilities:
(Example: 34MGR63203825, 01, Airfield suitable for light aircraft and airborne operations, unoccupied. RWY 09/27, 1000m, grass)
- b. Support Facilities:
Not applicable.

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: None observed)
- b. Functional Damage:
(Example: None observed.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment :

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CATEGORY 11: COASTAL RECONNAISSANCE²

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Shore
- c. FUNCTION / NATURE/ SUBORDINATION: (Example: Fjord)

2. Status:

- a. DEPLOYMENT: Not applicable
- b. SERVICEABILITY: Not applicable
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Not applicable
- e. HARDENING: Not applicable
- f. CONSTRUCTION: Not applicable
- g. CAMOUFLAGE: Not applicable

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness

(Example: 34MGR63153821, 01, Vehicle Ferry, moored at jetty)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: None observed)
- b. **Surface**
(Example: None observed)
- c. **Passive Defence**
(Example: None observed)

² Note to taskers: Stipulate the width of the coastal strip required and consider the time of low water.

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5. Facilities / Description: Report location, number, function, type, serviceability and suitability for operation:

- a. Primary Facilities:
(Example: 34MGR63153821, 01, Ferry terminal serviceable with vehicle loading jetty, occupied, suitable for transshipment operation. Access to shore and Ferry terminal by a single lane road heading East along coast line)
- b. Support Facilities:
Not applicable.

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: None observed)
- b. Functional Damage:
(Example: None observed.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:

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CATEGORY 12: BRIDGES

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Bridge / Tunnel / Aqueduct / Viaduct / Culvert / Pipeline
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Single bridge, Road over river)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34MGR56783426, 01, VCP, in operation)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: 34MGR56783426, 02, AAA, ZU23 2)
- b. **Surface**
(Example: Each side of the bridge access on North bank, probable Mine fields)
- c. **Passive Defence**
(Example: None observed)

5. Facilities / Description: See Annex B for reporting flow diagram for description of structure.

- a. Primary Facilities: See flow diagram extended with:
 - Dimensions (if requested)
 - Overall length and width
 - Width of obstacle gap
 - Length of individual spans(Example: 02 lanes serviceable, 06 span deck type, concrete beam and deck, road over river skew bridge, orientation North to South with concrete piers and concrete box type abutments.)
- b. Support Facilities:
(Example: Southern approach straight, embanked. 500 m. east serviceable rail over river bridge.)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Confirmed moderately damaged. Weapon penetration 45m from Northern Abutment.)
- b. Functional Damage:
(Example: Moderate functional damage. Southern lane remains in use by heavy traffic.)
- c. Collateral Damage:
(Example: Confirmed apartment building 450m NE of RP severe damage and on fire.)

7. Analyst comment:

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CATEGORY 13: WATER CONTROL INSTALLATIONS³

1. Location and Type:
 - a. **CONFIRMED LOCATION:**
 - b. **TYPE:** Water control / storage / treatment / Unknown
 - c. **FUNCTION, NATURE & SUBORDINATION:** (Example: High Dam, Flood control and hydro electric power production)
2. Status:
 - a. **DEPLOYMENT:** Permanent / Temporary / Unknown
 - b. **SERVICEABILITY:** Serviceable / Partly Serviceable / Unserviceable / Unknown
 - c. **OCCUPATION:** Occupied / Partly Occupied / Unoccupied / Unknown
 - d. **CAPABILITY:** Operational / Partly Operational / Non operational / Decoy / Unknown
 - e. **HARDENING:** Hardened / Partly hardened / Non hardened / Unknown
 - f. **CONSTRUCTION:** Under Construction / Modified / None Observed
 - g. **CAMOUFLAGE:** Camouflaged / Partly camouflaged / None Observed
3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: HEP Plant active, with 03 out of 04 tail races visible)
4. Defence: Report location, number, function, type for each item:
 - a. **Local Air Defence:**
(Example: 31UTM45763214, 06, AAA, S60)
 - b. **Surface:**
(Example: 030° 100m RP, Defensive Positions)
 - c. **Passive Defence:**
(Example: Barbed Wire protected)

³ Note to taskers: If the essential element of information relate to power production, this should be tasked as Cat. 17

5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: Dam, Straight gravity: 01 Turbine generator house; 04 Spillways)
- b. Support Facilities:
(Example: 150m SW RP, 24 hours capability of illumination and pedestrian crossing over dam)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: no damage.)
- b. Functional Damage:
(Example: no damage.)
- c. Collateral Damage:
(Example: no damage.)

7. Analyst comment:

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CATEGORY 14: PORT INSTALLATIONS

1. Location and Type:
 - a. CONFIRMED LOCATION:
 - b. TYPE: Military / Civilian / Mixed / Unknown
 - c. FUNCTION, NATURE & SUBORDINATION: (Example: Tidal Harbour)
2. Status:
 - a. DEPLOYMENT: Permanent / Temporary / Unknown
 - b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
 - c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
 - d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
 - e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
 - f. CONSTRUCTION: Under Construction / Modified / None Observed
 - g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed
3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34MGR56783426, 02, Balk Cargo ships, moored at northern quay, unloading)
4. Defence: Report location, number, function, type for each item:
 - a. **Local Air Defence**
(Example: None observed)
 - b. **Surface**
(Example: None observed)
 - c. **Passive Defence**
(Example: Single fence secured)

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5. Facilities / Description: Report location, number, function, type for each item:
 - a. Primary Facilities:
(Example: At RP, 01, Non tidal bassin with sliding caisson gates)
 - b. Support Facilities:
(Example: 34MGR566835, 02, rail served transshipment warehouse)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.
 - a. Physical Damage:
(Example: Transshipment warehouse light damage. Railway north of warehouse cut 50m from warehouse)
 - b. Functional Damage:
(Example: Confirmed light damage for the port.)
 - c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:

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CATEGORY 15: RAIL INSTALLATIONS

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Military / Civilian / Mixed / Unknown
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Marshalling Yard, Through sidings)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: At R.P., 16 Box Cars, 04 Flat Cars, 10 Open Hopper Cars)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: 31UTM45763214, 03, AAA, ZU23 2)
- b. **Surface**
(Example: None Observed)
- c. **Passive Defence**
(Example: Single fence secured)

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: At RP, 23 non electrified tracks)
- b. Support Facilities:
(Example: Immediately south of RP, 01, hump control building)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Confirmed single weapon impact at northern track. Track damaged.)
- b. Functional Damage:
(Example: Northern track cut cannot be by pass, 01 crain car conducting repair activities)
- c. Collateral Damage:
(Example: None observed)

7. Analyst comment:

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CATEGORY 16: INDUSTRIAL INSTALLATIONS

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Military / Civilian / Mixed / Unknown
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Processing, Petrochemical, Oil)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged /Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34MGR56783426, IR emissions indicate 02 pipe furnaces are active)

4. Defence: Report location, number, function, type for each item:

a. **Local Air Defence**
(Example: None observed)

b. **Surface**
(Example: None observed)

c. **Passive Defence**
(Example: Single fenced secured, 200m East RP, 01, Access Control building)

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5. Facilities / Description: Report location, number, function, type for each item:
 - a. Primary Facilities:
(Example: At RP, 02, fractionating towers)
 - b. Support Facilities:
(Example: 200m SW RP, 02, floating top POL storage tanks)
6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.
 - a. Physical Damage:
(Example: Confirmed severe damaged on water distillation plant, weapon impact in control building. No IR emission from distillation towers.)
 - b. Functional Damage:
(Example: Confirmed severe damage POL refining stopped.)
 - c. Collateral Damage:
(Example: None observed.)
7. Analyst comment:

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CATEGORY 17: POWER INSTALLATIONS

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Distribution / Production / Unknown
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Hydroelectric, High Dam)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged /Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: HEP Plant active, with 03 out of 04 tail races visible)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: None observed)
- b. **Surface**
(Example: None observed)
- c. **Passive Defence**
(Example: Single fence secure)

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: At RP, 01, Generator Hall with 04 Turbines)
- b. Support Facilities:
(Example: 50m West of RP, 01, overhead gantry crane.)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: Light damage to the generator hall. 03 small craters 100m SW of RP.)
- b. Functional Damage:
(Example: Possibly 25% functional damage.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:

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CATEGORY 18: URBAN AREAS / HABITATIONS

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Military / Civilian / Mixed / Unknown
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Camp, Refugee camp, UNHCR)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Not applicable
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: 34UMT64317264, 10 4 Ton CCT, 04 LWB Landrovers. At least 150 personnel in the open)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: None Observed)
- b. **Surface**
(Example: None Observed)
- c. **Passive Defence**
(Example: Fence secured)

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: 34UMT643726, approximately 300 improvised shelters. 06, Toilet/Shower tents. 50m East RP, 01, Feeding Area comprising, 04, large frame tents, 06, Field Kitchen trailers, 03, Water Bowser trailers.)
- b. Support Facilities:
(Example: Access by dirt road from the South.)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: None observed.)
- b. Functional Damage:
(Example: None observed.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:
(Example: estimated capacity 3000 personnel.)

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CATEGORY 19: SPECIFIC STRUCTURES

1. Location and Type:

- a. CONFIRMED LOCATION:
- b. TYPE: Military / Civilian / Mixed / Unknown
- c. FUNCTION, NATURE & SUBORDINATION: (Example: Commercial, Hotel)

2. Status:

- a. DEPLOYMENT: Permanent / Temporary / Unknown
- b. SERVICEABILITY: Serviceable / Partly Serviceable / Unserviceable / Unknown
- c. OCCUPATION: Occupied / Partly Occupied / Unoccupied / Unknown
- d. CAPABILITY: Operational / Partly Operational / Non operational / Decoy / Unknown
- e. HARDENING: Hardened / Partly hardened / Non hardened / Unknown
- f. CONSTRUCTION: Under Construction / Modified / None Observed
- g. CAMOUFLAGE: Camouflaged / Partly camouflaged / None Observed

3. Equipment and Activity: Report location, number, function, type, orientation, state of readiness for each item:

(Example: In car park at rear of the hotel, 06, media sat com dishes and associated BBV)

4. Defence: Report location, number, function, type for each item:

- a. **Local Air Defence**
(Example: Numerous light AAA on surrounding roof tops)
- b. **Surface**
(Example: MBT deployed at major intersections throughout local area)
- c. **Passive Defence**
(Example: Surrounding hotel, 2m wall, control of access.)

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5. Facilities / Description: Report location, number, function, type for each item:

- a. Primary Facilities:
(Example: 14 storey, flat roof, L shaped, concrete frame building.)
- b. Support Facilities:
(Example: Swimming pool and extensive leisure facilities within compound.)

6. Damage assessment: Annex A provides descriptive terms for the level of damage identified and guidance on making the functional damage assessment. Analysts may use the terms Confirmed, Probable and Possible within all items of the BDA report.

- a. Physical Damage:
(Example: None observed.)
- b. Functional Damage:
(Example: None observed.)
- c. Collateral Damage:
(Example: None observed.)

7. Analyst comment:

BATTLE DAMAGE ASSESSMENT

1. General

Battle Damage Assessment plays an essential part in the Commander's decision making process. The intelligence which flows from BDA forms the basis on which the decision to re attack a target or not, is based. The purpose of these notes is to give guidance on the terminology and techniques involved in damage assessment and reporting.

2. Physical Damage Assessment

The physical damage assessment is an estimate of the extent of damage caused to a planned target by the application of military force. The assessment is based on the observed or interpreted damage to the aimpoint.

3. Functional Damage Assessment

The functional damage assessment is an estimate of the reduction to the operational capability of a planned target by the application of military force. An estimation of the time required for recuperation or replacement of the target function should be included.

4. Unplanned Damage

There are two types of unplanned damage, the definitions of which depend on the relative military acceptability, as follows:

- a. Collateral Damage. Unintentional or incidental damage, caused by the application of military force, affecting facilities, equipment or personnel which are not militarily acceptable targets.
- b. Additional Damage. Unintentional or incidental damage, caused by the application of military force, affecting facilities, equipment or personnel that are militarily acceptable targets. To make this assessment an IA will require a detailed understanding of the offensive task and its detailed targeting.

5. Target Element List

The following list describes physical and functional damage considerations for a number of common target elements and detailing standard reporting terminology. The primary target category for each element is stated but most elements listed may be applicable to more than one target category:

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Runways and Taxiways	Cat 01
Steel Towers	Cat 03
Satellite Dishes	Cat 03
Hardened Facilities	Cat 04
POL Storage Tanks	Cat 05
Military Equipment	Cat 06
Ground Force Personnel	Cat 06
Ships	Cat 08
Roads	Cat 09
Tunnel Entrances	Cat 12
Bridges	Cat 12
Dams and Locks	Cat 13
Rail Lines and Railyards	Cat 15
Distillation Towers	Cat 16
Transformers	Cat 17
Powerplant Turbines and Generators	Cat 17
Buildings	Cat 19

a. Runways and Taxiways (Cat 01)

Physical Damage Definitions

No damage	No observable damage.
Damaged	Craters and ground distortions. It's necessary to define the size, position and distance between craters when damage is observed on the runway, the taxiway or apron.

In assessing physical damage to runways and taxiways, the functional capability of the runway or taxiway is also implied.

Functional Damage Considerations

The effectiveness of attacks on runways/taxiways is based upon surface cratering sufficient to prevent aircraft takeoff or land. To achieve interdiction, no undamaged part of the runway/taxiway must be long enough or wide enough for use as a takeoff surface. The critical factor when assessing runway/taxiway damage is knowledge of the type/category of aircraft that can or cannot use the airfield. A fighter or bomber base may be considered interdicted if normal operations of the aircraft stationed there are precluded. However, the airfield may be usable by other aircraft types which can operate an unimproved runway and the analyst should always have access to information on enemy aircraft types and their minimum operating surfaces (MOS).

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b. Steel Towers (Cat 03)

Physical Damage Definitions

No damage	No apparent/observable damage.
Damaged	Damage to support member(s), but the tower remains standing.
Destroyed	Tower is collapsed or toppled.

Functional Damage Considerations

The level of functional damage associated with physically damaged steel towers will depend upon the function and connectivity with other target elements. Examples of steel tower usage/functions include electric power transmission and communication antenna support.

c. Satellite Dishes (Cat 03)

Physical Damage Definitions

No damage	No apparent damage.
Light damage	A few reflective panels blown off.
Moderate damage	Less than 25 percent of dish reflective panels blown off plus damage to dish support structure and/or damage to feedhorn.
Severe damage	25 to 60 percent of reflective panels blown off plus some deformation of the dish and/or the dish's structural components. Antenna pointing changed.
Destroyed	Feedhorn is destroyed, and/or greater than 60 percent of reflective panels blown off and/or extensive structural deformation of the dish, and/or dish dislodged.

Functional Damage Considerations

Functional degradation to sites will depend on damage to the dish and/or its associated control building(s). When making this assessment, knowledge of the dish type (fixed or tracking) and location of the damage is critical.

d. Hardened Facilities (Cat 04)

Physical Damage Definitions

No damage	No apparent damage.
Light damage	No apparent weapon(s) penetration into facility observed, however damage to facility exterior is apparent.
Moderate damage	Weapon penetration observed.
Severe damage	Less than 1/3 of roofs / walls collapsed
Destroyed	More than 1/3 of roofs / walls collapsed

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Evidence of successful weapon(s) penetration may include entrance doors that have been blown off burn marks outside entrances, and/or venting of smoke (caused by fire or secondary explosions) through openings other than the weapon(s) penetration hole(s) (i.e., doors, air vents, etc.). Analysis of aircraft cockpit video (ACV) is essential to the assessment process of hardened facilities. The venting of weapon blast energy through doors and ventilation shafts can be readily seen on video. This must be compared to information on the internal configuration of the facility to determine approximate weapon detonation location relative to the critical element within the hardened target intended for destruction.

Functional Damage Considerations

A hardened facility is designed to protect the enclosed equipment and/or function. Extensive use of thick concrete, burster slabs, and soil layers, as well as facility size, generally precludes a partial collapse or physical destruction of the facility from a single weapon. Although external physical damage may be limited, a high order weapon detonation inside the facility will generally destroy the contents. Knowledge of how the hardened facility is constructed (i.e., dimensions, placement of walls, roof/floor/wall thickness etc.) is essential to assess accurately the extent of internal physical and functional damage that has occurred.

Functional damage to a hardened target depends on the facility's mission. If the hardened target serves in a storage capacity (aircraft or munitions), depending upon internal compartmentation, a weapon penetration usually results in damage/destruction of the contents. In these situations, depending on the degree of physical damage, the damaged contents can be removed and the facility can sometimes be reconstituted to serve as a protective structure for new equipment/supplies.

When the hardened facility serves in a command, control, and communications role, a successful weapon(s) penetration and detonation generally results in the damage or destruction of its mission/operations. In these situations, the extent of functional damage is dependent on estimates of physical damage to the internal structure, ventilation system, electronic/communication equipment, power supplies, lights, water lines, tools/equipment, etc. Generally, long recovery times are associated with this type of internal damage.

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e. POL Storage Tanks (Cat 05)

Physical Damage Definitions

No damage	No apparent damage.
Light moderate Damage	<u>Above ground tanks:</u> Top and/or side walls punctured, possible spillage of contents: no evidence of sustained fire: structural integrity remains intact <u>Underground or semi buried tanks:</u> Weapon(s) penetration of tank confirmed: evidence of secondary explosion or sustained fire.
Destroyed	At least partial collapse/buckling of side wall: alternatively, evidence of sustained fire and/or a secondary explosion.

Functional Damage Considerations

Significant functional damage of a POL storage installation is expressed in terms of storage capacity rendered unusable and the time required to repair or replace denied capacity. Although a POL tank may have sustained damage, its contents may be retrievable and usable.

f. Military Equipment (Cat 06)

Physical Damage Definitions

No damage	No apparent damage.
Damaged	Physical deformation present, such as holes in equipment; Scorching visible on exterior; and/or equipment Components blown off (broken tracks/wheels, armoured plates). Major components are still intact.
Destroyed	Unrepairable, possibly scrap. Catastrophic damage (K kill).

Careful consideration must be made when reporting NO DAMAGE. In certain cases physical deformation may not be seen. Analytical judgements using multiple sources/types of information, which may indicate no vehicular movement for extended periods, lack of detectable radio transmission, etc., must be considered by the BDA analyst.

When reporting physical damage, also include the NUMBER of pieces of equipment damaged or destroyed (where possible).

Functional Damage Considerations

In terms of equipment, the DAMAGED category generally equates to the following partial or complete disruption of the equipment's ability to function, although in some cases visible damage may have only minimal or no effect on this ability.

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Armoured vehicles and artillery: affects the equipment's fire power capability (F kill) and/or its mobility (M kill). This damage is not repairable by the crew on the battlefield.

Tracks: prevents vehicle mobility (M kill) and/or internal equipment usage for a number of hours until repairs can be made.

Radar antennas or their associated vans/trailers: prevents radar system from performing its intended function, either missile firing (F kill) or target acquisition/target tracking, until repairs can be made.

Functional damage of equipment also reduces the functional capability of command and control nodes; of logistics nodes to perform tasks of resupply such as fuelling, arming, and of engineering resources to provide mobility, countermobility, and survivability support.

The level of functional damage of a missile or radar site depends upon the extent of damage, the number/redundancy of critical elements and their damage, and the relationship of the various elements that make up the site.

For armoured vehicles, artillery, and trucks, refer to the section on ground force personnel functional damage considerations for additional information.

g. Ground Force Personnel (Cat 06)

Physical Damage Definitions

No damage	No apparent/observable casualties or damage to occupied positions or organic equipment operated by ground force personnel.
Damaged	Visible casualties or damage to occupied positions or organic equipment.
Destroyed	Visible casualties or damage to occupied positions or organic equipment resulting in 30 percent or more casualties.

For equipment, use the damage definitions for military equipment. Occupied positions (bunkers, structures, trenches) or equipment (personnel carriers, trucks, etc.) that have been damaged/destroyed will result in casualties.

The destruction of ground force personnel is defined in terms of unit effectiveness. 30% or more casualties will normally render a unit combat ineffective.

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Functional Damage Considerations

Generally, the greater the number of casualties and damage to equipment and communications/supply network, the greater the ground force attrition and the lower the combat effectiveness. As part of determining enemy combat effectiveness (the ability to function), two factors must be addressed in clear and simple terms:

- (1) Reconstitution of forces and recuperation of facilities,
- (2) Residual capabilities (to perform defence, assault, and supply missions).

Desertions or POW losses may also render a unit ineffective.

h. Ships (Cat 08)

Physical Damage Definitions

No damage	No apparent / observable damage.
Moderate damage	Physical deformation, and/or holes in ship/ship's equipment, and/or ability to move/manoeuvre reduced.
Severe damage	More than 1/3 of superstructure/deck area destroyed or burned, and/or major subsystems inoperable (weapon sensors, radar), and/or ability to move/manoeuvre destroyed.
Destroyed	More than 1/3 of the ship's waterline length is flooded (uncontrolled flooding). The ship's MAJOR subsystem supporting operations is destroyed.

When determining the level of physical damage, also consider the following:

Seaworthiness: listing (in degrees), capsized, sunk.

Firepower: level of damage to guns/launchers/magazines (described according to functions surface to air, surface to surface, antisubmarine): and damage to flight deck, hangars and aircraft elevators.

Mobility: Percentage damage to steering/rudder(s), percentage degradation to speed (of sustained speed capability).

Sensors: Search (air surface, subsurface), radars/sonars, and fire control in terms of percent damage.

C3: Damage to pilot house/bridge, combat information centre, communications centre/antennas, computer systems and data links. all need to be addressed in teens of percentage type, level of damage, and estimates of reconstitution times.

Functional Damage Considerations

The type and location of damage will determine the ship's ability to continue offensive/defensive operations and the requirement to conduct repairs back at the shipyard. When assessing functional damage, consider the ship's ability/inability to move and manoeuvre, and the degree of disruption to particular ship subsystems (e.g. weapons delivery capability, sensor functioning, etc.).

i. Roads (Cat 09)

Physical Damage Definitions

No damage	No apparent damage.
Cratered	Road cratered, but vehicles are able to manoeuvre around damaged section of roadway.
Cut	Road and adjacent shoulders with multiple craters in line and sufficiently close to prohibit vehicle movement through the cratered area of road surface.

Where geographically possible, an alternative to damaging a road with crater(s) is to stud the adjacent hillside to cause a landslide to cover the road.

Functional Damage Considerations

The effectiveness of attacks on roads is dependent upon the ability to reduce or stop the level of traffic flow. Factors used to estimate flow reduction and road repair requirements (typically roads can be rapidly repaired) include the ability to bypass the damaged road section by using the terrain adjacent to the shoulder, depth and width of cratered area, availability of repair equipment and personnel, etc.

j. Tunnel Entrances (Cat 12)

Physical Damage Definitions

No damage	No visible damage.
Light damage	No damage to portal, but a crater or soil, rock, or debris is partially blocking the entrance to the tunnel. If existing, the tunnel doors can be opened/closed and are passable.
Moderate damage	No damage to portal, but a crater or soil, rock, or debris is completely blocking the entrance to the tunnel; or if existing, the tunnel doors either cannot be opened/closed or have been blown off.
Severe damage	Partial collapse of portal and/or tunnel lining: entrance completely blocked.
Destroyed	Complete collapse of portal and/or tunnel lining.

Depending on the hardness of tunnel entrances and the number/type of weapon employed, a complete collapse of the portal may or may not occur.

Functional Damage Considerations

Physical damage to a tunnel entrance generally makes the entrance impassable. It may also reduce the protection to the facility's internal contents in follow on attacks. The extent of functional damage depends on the size of the crater or the amount of soil, rock, or debris that is blocking the entrance.

Functional damage is also dependent on the purpose of the tunnel facility. For example, a storage type tunnel facility is much more vulnerable to tunnel entrance damage than a C3 type tunnel facility. The time required to repair tunnel entrances will depend on the extent of damage or the availability of personnel and equipment. There may also be multiple entrances to the underground facility.

Finally, when assessing functional damage to a tunnel facility, the level of physical damage to the facility's air vent(s) must also be considered.

k. Bridges (Cat 12)

Physical Damage Definitions

No damage	No apparent damage
Light damaged	Superficial damage to bridge but road is intact.
Moderate damaged	All spans are attached but one or more have 50% of the deck bridge destroyed. in the case of pontoon bridges two or more non adjacent pontoons have been sunk.
Severe damage	All spans attached, but one or more spans have 50 percent of the deck width destroyed
Destroyed	One or more spans have been dropped; piers or abutments may be damaged/destroyed. One or more pontoon sections have been sunk.

The IA should report the number of spans dropped together with the total number in the bridge.

Functional Damage Considerations

In reporting moderate or severe, indicate the number of remaining usable lanes and direction of travel. In considering recuperation times report the presence of alternative crossings and sightings of spare parts for pontoon bridges

I. Dams and Locks (Cat 13)

Physical Damage Definitions

No damage	No apparent/observable damage.
Damaged	Dam/lock has been breached (or penetration of dam/lock face) leading to seepage on downstream side.
Destroyed	Dam/lock has burst resulting in the inability of dam/lock to operate and to contain water on upstream side.

Functional Damage Considerations

For this target, the functional capability of damaged dams/locks is contained within the physical definitions.

m. Rail Lines and Railyards (Cat 15)

Physical Damage Definitions

No damage	No apparent damage.
Cut	Track severed, prohibiting movement around the damaged area. Movement around or past the damaged area (choke point or railyard) still possible on other lines.
Destroyed	Multiple tracks with multiple Cuts to prevent rolling stock from moving around or past damaged area (choke point or railyard).

These definitions cover the functional capability of the railyard.

Functional Damage Considerations

The location of rail yard "cuts" and the ability to bypass the damage will determine the extent of functional damage to the facility. The presence of new rails and repair equipment/manpower may mean a short recuperation time.

n. Distillation Towers (Cat 16)

Physical Damage Definitions

No damage	No apparent damage.
Light damage	No apparent penetration of tower shell or disruption to piping connections; however, portions of the insulation covering the tower shell appear damaged and/or scorched.
Moderate damage	Tower shell remains standing; tower has been penetrated by weapon(s) or shrapnel and/or piping connections are deformed or severed.
Destroyed	Tower at least toppled or partially collapsed.

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When reporting physical damage to a specific tower you should include damage or lack of damage to equipment directly associated with the tower. This equipment will usually include one or more furnaces, heat exchangers or condensers, and elevated pipeways. If identified, report damage or lack of damage to the control building associated with the distillation tower.

Functional Damage Considerations

The effects of damaged distillation towers on a target's production capabilities depend on the specific functions of the towers, i.e., primary distillation or secondary processing. Functional damage to distillation towers is expressed in terms of time required for repair or replacement and the specific production capabilities denied. It is important to report damage to equipment directly associated with a distillation tower because the results could be comparable to inflicting significant damage to the tower.

o. Transformers (Cat 17)

Physical Damage Definitions

No damage	No apparent damage.
Damaged	The structure of the unit is intact, but appears to be blackened as a result of a fire or leakage of oil..
Destroyed	The structure of the unit appears to be torn apart or extensively distorted. Catastrophic damage.

When reporting physical damage, include the NUMBER of transformers damaged or destroyed.

Functional Damage Considerations

The effect of transformer damage on the target's function is dependent on the power requirements of the facility and the ability to re route the power.

p. Powerplant Turbines and Generators (Cat 17)

Physical Damage Definitions

No damage	No apparent / observable damage.
Damaged	No apparent weapon penetration of unit, but the environmental housing over the unit has sustained damage and disfigurement. The unit may also have been displaced from its foundation.
Destroyed	Turbine or generator unit breached/penetrated and has sustained extensive structural deformation, unit appears to be torn apart Catastrophic damage (K kill).

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When reporting physical damage, report if possible the NUMBER of turbines or generators that are damaged and destroyed out of the total number of units at the facility. The common type of powerplant consists of a multistorey framed building containing multiple turbine and generator units. Physical damage to the turbine/generator units may be difficult to identify if the generator hall remains relatively intact. Therefore, damage estimates to the units are based upon the weapon detonation location and physical damage to the building itself. The closer to the floor that a weapon detonates, the greater the probability of unit damage. The extent/location of structural damage, vice roof panel damage, to the building is another indicator of unit damage the greater the extent of wall damage and structural collapse, the greater the likelihood that the unit(s) are damaged or destroyed under the rubble. When performing BDA on a generator hall report physical damage to both the building and where possible an estimate of turbine/generator damage located inside.

Functional Damage Considerations

Destruction of one turbine/generator unit will partially degrade the electrical production function of a power plant. These target components are an example of machinery being less vulnerable than the structure in which it is contained. The generator hall may be moderately damaged, while the turbine/generator unit(s) contained within the building may have received little damage.

q. Buildings

Physical Damage Definitions

No damage	No visible damage to target area.
Light damage	Up to 15% of the target area damaged
Moderate damage	15 to 45% damage to target area.
Severe damage	45 to 75 % damage to target area
Destroyed	75 to 100% damage to target area

Framed structures rarely collapse in the same way as load bearing structures. It is not necessary for the structural members of a framed building to collapse to obtain a percentage of damage. Damage to windows, cosmetic panels, etc should be included in the estimate of percentage damage. Monitor distortion is often an indicator of damage to a structural member.

In the case of buildings higher than four storeys the damage report should be restricted to those storeys where harm is visible.

In reporting on buildings with multiple wings, report destroyed wings and damage to other sections.

Functional Damage Considerations

A building is designed to provide an environmental shelter for the enclosed function or equipment. Destruction of the building may not be the aim; rather, destruction of the critical element(s) inside should be the objective. The greater the extent of physical damage to the building, the greater the likelihood of destroying the critical element(s) and hence, the longer the required recuperation time to restore the function.

Although there is a correlation between the level of physical damage to a building and functional damage to its critical element(s), the LOCATION and HARDNESS of a building's contents are key to a meaningful functional assessment. For example, in an industrial building, the machinery may be less vulnerable than the structure in which it is contained. The structure might be moderately damaged with the machinery receiving little or no damage. On the other hand, in a HQ building that contains fragile computer or electronic equipment, the equipment may be destroyed before the structure is significantly damaged.

When assessing framed structures, it may be more difficult to determine functional damage to the building's contents because framed structures are less likely to collapse (less apparent physical damage). In contrast, load bearing structures tend to collapse more easily (more apparent physical damage) thereby making functional damage of the structure's contents more likely and possibly easier to assess.

General weaponeering guidance considers a building unusable (functionally destroyed) when it has sustained 50 percent STRUCTURAL damage. Depending on the type and location of critical elements, a lesser percentage of damage may be adequate to achieve the desired level of functional degradation.

A building may also serve as an important landmark or other symbol of national unity and resolve; in these cases, the entire building may be the critical element.

EXAMPLE OF MILITARY SUBORDINATION

Note: These lists are not exhaustive, and analysts are free to use any other terms required.

For further information, see ATP 26 (B).

Note: This list is available for all categories.

Army / Paramilitary	Front Army Corps Division Brigade Regiment Battalion Company Platoon Section	Group Battery
Navy	Fleet Squadron Flotilla Division Unit	Task Force (TF) Task Group (TG) Task Unit (TU) Task Element (TE)
Air Force	Air Corps Air Division Air Brigade Air Base Wing Squadron Flight Patrol	
Others	See Note	

Note: Subordination may include Organisations such as UNHCR, Red Cross/Crescent, MSF, ...

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CATEGORY 01: AIRFIELDS

Examples for 1b and 1 c.

Military Civilian Mixed Unknown	Airbase Airfield Airport Airship Altitude Airport Decoy Field Airport Flying boat base Helicopter landing zone Heliport Highway strip Private Space launch Unprepared Other (to be specified) Unknown	Agricultural Anti Submarine Warfare Attack Balloon Bomber Civil defence Coast Guard Domestic Fighter Air to ground Fighter Air Defence Flight test centre Freight Glider International Liaison Light Aviation Maritime Patrol Passenger Police Research and development Search And Rescue Training UAV ULM / Microlight Other (to be specified) Unknown
--	--	--

Examples for 5 a. Primary Facilities

Runway Taxiway Highway Strip Dispersal Area Revetment Apron Hardstand Aircraft Storage Shelter Bunker Operations Centre ORP	Parallel Link Parking Refuelling Revetted Hardened Aircraft Environmental Aircraft Hardened Aircraft Command Storage Base Wing Sqn
--	--

Examples for 5 b. Support Facilities

Hangar Air Traffic Control Power Supply Maintenance Electronics Ammunitions Storage Building POL Access and Approach Terrain (if tasked) Decoy Unknown	Communication Radar Navaid Conventional Special Rail Road Water Air Pipeline
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CATEGORY 02: MISSILES AND ARTILLERY SYSTEMS

Examples for 1b and 1 c.

Military Civilian Mixed Unknown	Artillery Laser Missiles Space Launch	ABM Coastal Defence Guns MBRL Rockets SAM SSM Decoy Other (to be specified) Unknown	Anti Tank Ballistic Missile Fixed Man Portable Mobile Mortar Research and development Self Propelled AAA Self Propelled Artillery Semi Mobile Towed AAA Towed Artillery Other (to be specified) Unknown
--	--	--	--

Examples for 5 a. Primary Facilities

Launch area Electronics area Control area	Launch position Electronic position Control position
---	--

Examples for 5 b. Support Facilities

Power supply Storage area Support area Access and Approach Terrain (if tasked) Decoy Unknown	Primary power Backup power Building Bunker Open storage POL Accommodation Administration Maintenance Training Rail Road Water Air Pipeline
--	--

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Examples for 5 b. Support Facilities

Power supply	Primary power Backup power
Storage area	Building Bunker Open storage POL
Support area	Accommodation Administration Maintenance Training
Access and Approach	Rail Road Water Air Pipeline
Terrain (if tasked) Decoy Unknown	

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CATEGORY 04: MILITARY HEADQUARTERS and BARRACKS

Examples for 1b and 1 c.

Air Force Army Marines Navy Paramilitary Mixed Unknown	Air defence Armour Artillery Aviation Engineer Infantry Logistic Mixed Decoy Other (to be specified) Unknown	Administration Barracks Building Bunker Camp Command Post Fort Headquarters Hospital Logistic Maintenance POW camp Prison Test Centre Training Other (to be specified) Unknown
--	--	--

Examples for 5 a. Primary Facilities

Headquarters Communication centre	
--------------------------------------	--

Examples for 5 b. Support Facilities

Power supply Storage area Support area Access and Approach Terrain (if tasked) Decoy Unknown	Primary power Backup power Building Bunker Open storage POL Accommodation Administration Maintenance Training Rail Road Water Air Pipeline
--	--

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CATEGORY 05: STORAGE AND REPAIR INSTALLATIONS

Examples for 1b and 1 c.

Military Civilian Mixed Decoy Unknown	Depot Distribution Repair Storage Decoy Other (to be specified) Unknown	Ammunition Chemical Equipment Gas Live stock NBC POL Raw material Vehicle Water Other (to be specified) Unknown
---	---	--

Examples for 5 a. Primary Facilities

Building Bunker Depot Material handling facilities Store Tank Warehouse Workshop	
---	--

Examples for 5 b. Support Facilities

Power supply Support area Transshipment Access and Approach Terrain (if tasked) Decoy Unknown	Primary power Backup power Accommodation Administration Maintenance Rail Road Water Air Pipeline
---	---

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CATEGORY 06: MILITARY ACTIVITY

Examples for 1 c.

Air defence Artillery Aviation Cavalry Engineer Infantry Logistic Mixed Reconnaissance Decoy Unknown	Airlift Amphibious Armoured Bridging Command Crossing Dismounted Mechanised Mine warfare Motorised Self propelled Towed Transport Decoy Other (to be specified) Unknown	Front Army Corps Division Brigade Regiment Battalion Company Platoon Section Unknown Other (to be specified)
--	--	---

Examples for 5 a. Primary Facilities

Deployment

Examples for 5 b. Support Facilities

Terrain (if tasked)

CATEGORY 07: OBSTACLE CROSSING

Examples for 1b and 1 c.

Military Civilian Mixed Unknown	Engineer bridging Ferry Ford Decoy Other (to be specified) Unknown	Amphibious Assault Cable Chain Improvised Pontoon Submerged Other (to be specified) Unknown
--	---	--

Examples for 5 a. Primary Facilities

Banks

Examples for 5 b. Support Facilities

Area Transshipment Alternate crossing Access and Approach Terrain (if tasked) Decoy Unknown	Preparation area Waiting area Rail Road Water Air Pipeline
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CATEGORY 08: SHIPPING

Note: For further information on ships, analysts could report to Stanag 1166.

Examples for 1b and 1 c.

Military	Auxiliary	Ammunition Ship	(AE)
Coast Guard	Combatant	Amphibious Assault Dock	(LPD)
Civilian	Fishing	Amphibious Assault	(LPH)
		Helicopter	
Mixed	Merchant	Amphibious Command Ship	(LCC)
Unknown	Pleasure	Auxiliary Misc	(AG)
	Decoy	Barrack	(APB)
	Other (to be specified)	Bulk Carrier	(B)
	Unknown	Cargo	(AK)
		Cargo	(C)
		Container	(Con)
		Factory Ship	(FFMS)
		Gas Tanker	(LGC)
		Harbour Fire	(YTR)
		Harbour Tug	(YT)
		Hospital	(AH)
		Icebreaker	(IB)
		Intelligence Collector	(AGI)
		Landing Craft Air Cushion	(LCAC)
		Landing Craft Assault	(LCA)
		Landing Ship Dock	(LSD)
		Landing Ship Logistics	(LSL)
		Landing Ship Medium	(LSM)
		Landing Ship Tank	(LST)
		Liner	(L)
		Mine Countermeasures Ship	(MCM)
		Mine Hunter	(MH)
		Mine Sweeper Ocean	(MSO)
		Minehunter / Sweeper Coastal	(MHSC)
		Patrol Boat	(PB)
		Patrol Craft	(PC)
		Patrol Gunship	(PG)
		Patrol Gunship Guided Missile	(PGG)
		Patrol Hydrofoil Guided Missile	(PHG)
		Repair	(AR)
		Replenishment Fleet	(AFS)
		Replenishment Oiler	(AOR)
		Research	(AGE)
		RoRo Cargo	(RoC)
		RoRo Ferry	(RoCF)
		Salvage	(ARS)
		Salvage & Rescue	(ATS)
		Submarine	(SS)
		Submarine Ballistic Missile	(SSBN)
		Submarine Nuclear	(SSN)
		Support Tanker	(AO)
		Survey Ship	(AGS)

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		Training Barge Cable Ship Dumb barge Floating Dry Dock Pusher Boat Sailing Boat Trawler Yacht Other (to be specified) Unknown	(TS)
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Examples for 5 a. Primary Facilities

For military ship: if not standard for class describe modifications.

For merchant ship: describe ship and report nationality and name if possible.

Examples for 5 b. Support Facilities

Not Applicable

CATEGORY 09: ROUTE RECONNAISSANCE

Examples for 1b and 1 c.

Railway Roadway Waterway	Number of lanes Number of tracks	Canal Irrigation channel Main line Main road Minor road Motorway Narrow guage River River Estuary Secondary road Wadi Other (to be specified) Unknown
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Examples for 5 a. Primary Facilities

Physical features Choke points Junctions	Cutting Electrified Elevated Embanked Lighted Navigable Bends Bridges Flooding Gradients Landslide Tunnels Cloverleaf Road crossing Roundabout T Junction Triangular Y Junction
--	--

Examples for 5 b. Support Facilities

Areas Terrain (if tasked)	Parking Marshalling Refuelling
--------------------------------------	--------------------------------------

CATEGORY 10: TERRAIN RECONNAISSANCE

Examples for 1b and 1 c.

Terrain	Coastal Desert Lowland Mountainous Undulating Other (to be specified)	Agricultural / Arable / Livestock Beach Cliff Depression Depressions Disturbed earth Dune Forests Coniferous / Deciduous / Mixed Gorge Heath Hilly Marshland Meadowland Moorlands Pass Quarry Rocks Scrub Sloping Sunken Road Swampland Valley Wadi Other (to be specified)
---------	--	--

Examples for 5 a. Primary Facilities

Significant points and areas	Cable ways Glacier Obstructions Orchard Pipelines Power lines Ski Lifts Telephone lines Urban area Vineyard
------------------------------	--

Examples for 5 b. Support Facilities

Not Applicable

CATEGORY 11: COASTAL RECONNAISSANCE

Examples for 1b and 1 c.

Shore	Bay Beach Cliff Coral reef Creek Delta Escarpment Estuary Fjord Mangrove Swamps / Marshes Tidal Flat Other (to be specified)	
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Examples for 5 a. Primary Facilities

Significant points and areas	Head lands Inlets Reef Obstacle Erosion p r o t e c t i o n Approaches	Wreck Obstruction Groynes Sea Wall Break water Shore to the interior of the country Status of the communication routes
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Examples for 5 b. Support Facilities

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CATEGORY 12: BRIDGES

Examples for 1b and 1 c.

Single	Aqueduct	Canal	Over	Canal
Twin	Bridge	Pedestrian	Under	Pedestrian
Side by side / Double	Culvert	Rail		Rail
Triple	Pipeline	Road		River
Treble	Tunnel	Mixed		Road
Combined	Viaduct			Water

Examples for 5 a. Primary Facilities

See diagram below for description, additional information can be added as free text within the flow chart.

Include dimensions if requested.

Examples for 5 b. Support Facilities

Alternate crossing	Rail
Access and Approach	Road
	Water
	Air
	Pipeline
Terrain (if tasked)	
Control facilities	Control post
	Signals
Decoy	
Unknown	

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1. SIMPLE BRIDGE

This may be used for any bridge where the spans are of similar type and form.

A	#	Lanes	Parapets/Pedestrian access Sideways/ Bicycle paths	Electrified	Servicable	Single	Deck	Steel	Arch	Bowstring Beam & Deck	Rail	River	Road	Over	Road	Bridge with	Steel	Masonry	Abutments
		Tracks	Not Electrified	Damaged	Five	Multi	Semi Through	Masonry	Lattice Girder	Truss	Aque duct	Canal	Depression	Concrete	Suspension	Cable stay	Etc...		
			Etc...					Concrete	Suspension	Cable stay	Etc...								

Skew to be inserted here if appropriate

Notes: If more than one type is involved in a multi span bridge see "Composite bridge "

- a. If the bridge contains a moveable span or is of cantilever construction see "Cantilever and movable bridges or span "
- b. Additional details (ie. Truss type, Upper Lateral bracing, etc) should be included if required.

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2. COMPOSITE BRIDGE

This may be used for any bridge with spans of more than one type or more than one form of construction

A	#	Lanes	Electrified	Service able	Single	Deck	Road	Road	Road	Bridge	Comprising From	East to West	
		Tracks	Not Electrified	Damaged	Five	Through	Span	Over	Rail				River
			Disused	Multi	Semi through	Composite	Part Deck, Part Through	Rail	Canal				Et c...

Parapets/ Pedestrian access
Sideways/Bicycle paths

Skew to be inserted if appropriate

Description of spans:

A	#	Lanes	Electrified	Service able	Single	Deck	Steel	Arch
		Tracks	Not Electrified	Damaged	Five	Span	Through	Bowstring
			Disused	Multi	Semi through	Type	Beam & Deck	Plate Girder

Followed by	Lattice Girder	Truss	Suspension	Portal
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Repeat sequence until all sections of bridge have been described

Piers and abutments are then described noting any variations in construction and relation to particular spans.

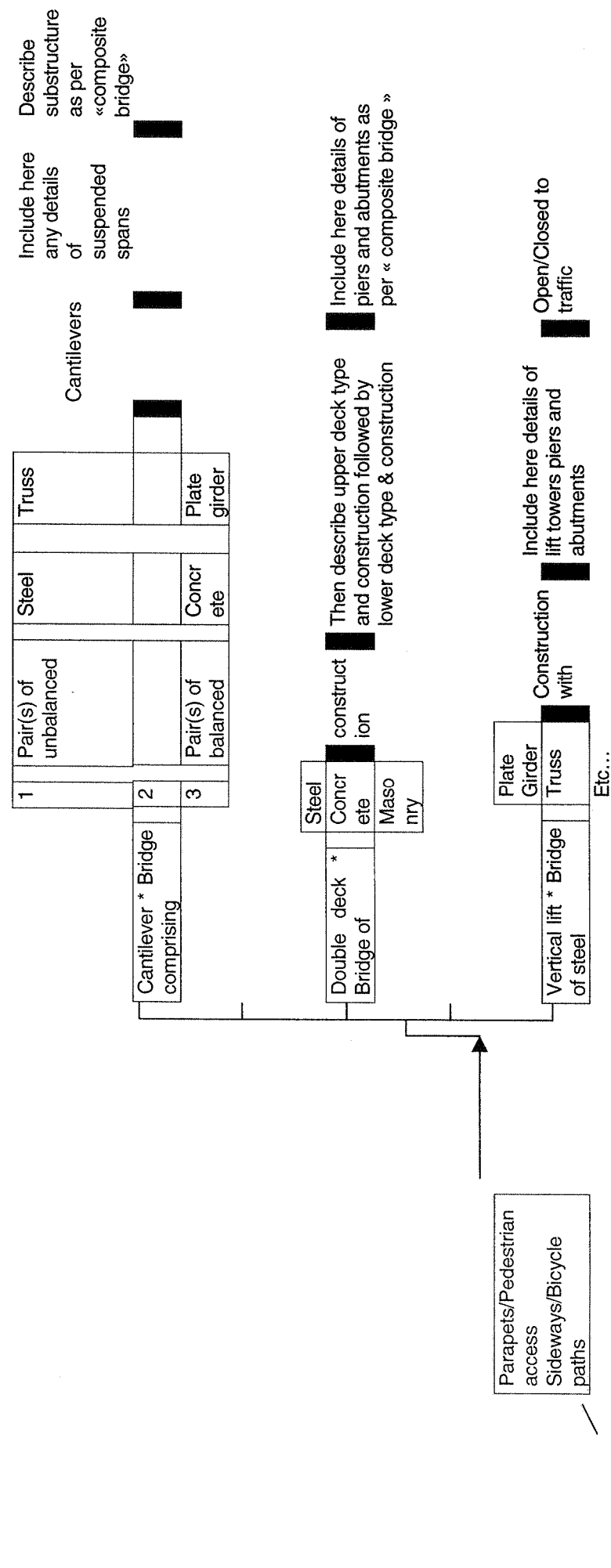
Notes:

- a. If the bridge contains a moveable span or is of cantilever construction see "Cantilever and movable bridges or span"
- b. Additional details should be incorporated where appropriate.

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3. CANTILEVER AND MOVABLE BRIDGES OR SPANS

This key may be used for any cantilever or moveable bridge or in shortened form for individual cantilever or movable spans within a composite bridge



A #	Lanes	Electrified	Single	Deck
	Tracks	Not Electrified	Five Multi	Span Through Semi through

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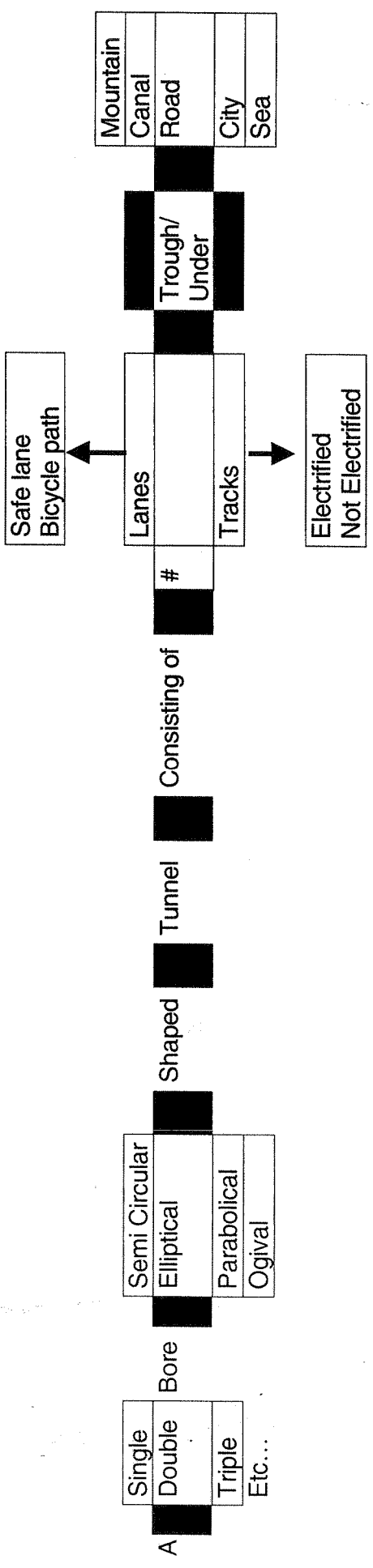
Single opening	Trunnion	Steel	Truss	Open/ Closed to traffic
	Rolling lift	Bascule * Bridge of	Construction with	Include here details of piers and abutments
Double opening	Light overhead	Concrete	Beam & Deck	

TYPE

Single opening	Centrally Pivoted	Steel	Truss	Open/ Closed to traffic
	Asymmetrically Pivoted	* Swing Bridge of	Construction with	Include here details of piers and abutments
Double opening	End Pivoted	Concrete	Beam & Deck Etc...	

4. TUNNELS

This key may be used for any tunnel



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CATEGORY 13: WATER CONTROL INSTALLATIONS

Examples for 1b and 1 c.

Water control Water storage Water treatment Unknown	Barrier Desalination Dyke High Dam Lock Low Dam Pump house Sewage Sluice Decoy Other (to be specified) Unknown	Canal Coffer Dam Diversions Flood control Power production River Tidal Other (to be specified) Unknown
--	---	--

Examples for 5 a. Primary Facilities

Include dimensions if requested.

Dams	Gravity arch Horizontal arch Multiple arch and buttress Slab and buttress Straight gravity Straight gravity reinforced Weir	Anchor piers Control building Penstocks Pump house Sluice gate Spillways Surge tower Towers Transformer/switch yard Turbine generator house Valve house
Locks	Double Flight/staircase Single Straight Triple Twin	Basin Curved turn gate Curved V gate Double opposed curved V gates Double opposed V gate Drop gate False basin Floating caisson Safety gate Segmental gate Sliding caisson gate Transporter sliding caisson gate V gate Vertical lift gate Longitudinal Transverse Vertical
Water control	Pump house Sluice	

Examples for 5 b. Support Facilities

<p>Boom Bridge crossing (see Cat 12) Channel markers <u>Dolphins</u> Electronics Fenders Fish ladder Handling cranes Illumination Layby Marine slipway Mooring piles Pedestrian crossings Power supply Signals Trashracks Access and Approach</p> <p>Terrain (if tasked) Decoy Unknown</p>	<p>Rail Road Water Air Pipeline</p>
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CATEGORY 14: PORT INSTALLATIONS

Examples for 1b and 1 c.

Naval Commercial Civilian Mixed Unknown	Tidal Non tidal Inland Offshore Other (to be specified) Unknown	Anchorage Base Dockyard Harbour Pier Port Submarine base Decoy Other (to be specified) Unknown
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Examples for 5 a. Primary Facilities

Basin Lock Breakwater Mole Building way Patent Slip Dock Quay Hard Wharf Pier Dolphin Pile Buoy Crane Conveyor Elevator Pipeline RoRo Ramp	Tidal Non tidal Dry dock Floating dry dock L shaped pier Finger pier Oiling pier Jetties Trot Shore connected Mooring Transshipment Navigation Hammerhead crane Portal jib crane Gantry crane Container crane Floating crane
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Examples for 5 b. Support Facilities

Shipbuilding	Fabrication building
Transshipment facilities	Assembly building
	Shed
	Building
	Container
	Open
Storage facilities	Ammunition
	POL
	Gas
	Shed
	Warehouse
	Dry products
	Building
	Container
	Open
	Silo
Command and control	Harbour control building
	Navigation aids
Administration	Headquarters
	Barracks
	Offices
Access and Approach	Rail
	Road
	Water
	Air
	Pipeline
Terrain (if tasked)	
Decoy	
Unknown	

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CATEGORY 15: RAIL INSTALLATIONS

Examples for 1b and 1 c.

Military	Passenger	Flat shunting yard
Civilian	Depot	Gauge change facility
Mixed	Freight	Gravity shunting yard
Unknown	Marshalling Yard	Hump shunting yard
	Mixed (to be specified)	Locomotive depot
	Service and repair	Rolling stock depot
	Decoy	Sidings
	Other (to be specified)	Terminal stations
	Unknown	Through stations
		Other (to be specified)
		Unknown

Examples for 5 a. Primary Facilities

Number of tracks	Description (precise electrified)	Electrified / Non
Yards	Forwarding yard	
	Receiving yard	
	Secondary sorting yards	
	Sorting yard	
Junctions	Burrowing	
	Cross over	
	Diamond crossing	
	Double junction	
	Fly over	
	<u>Level crossing</u>	
	Single junction	
	Single turnout	
	Square crossways	
	Symmetrical turnout	
	Three throw turnout	
	Triangular	
	Turntable	
Tunnel	See Cat 12 for details	
Bridge	See Cat 12 for details	

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Examples for 5 b. Support Facilities

Command and Control	Control post Signal building Station building Supply post
Loading area	Bays Bulk handling equipment Conveyor belts Cranes Platforms Ramps
Repair facilities	Assemble shop Inspection pit Rolling platform Round house Shed Traverser Work shop
Storage facilities	Ash pit Coal storage Covered storage area Grain silos Open storage area POL storage Water storage
Signals	Signal box Traffic light
Access and Approach	Rail Road Water Air Pipeline
Terrain (if tasked)	
Decoy	
Unknown	

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CATEGORY 16: INDUSTRIAL INSTALLATIONS

Examples for 1b and 1 c.

Military Civilian Mixed Unknown	Distribution Extraction Processing Production Research and development Decoy Other (to be specified) Unknown	Agricultural Chemical Consumer goods Engineering Fisheries Metal Mineral Nuclear Petrochemical Recycling Other (to be specified) Unknown	Livestock Forestry Crops Explosive Fuels Pharmaceutical Automotive Electrical Aeronautical Armaments Shipbuilding Iron and steel Aluminium Copper Cement Oil Gas Polymer Other (to be specified)
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Examples for 5 a. Primary Facilities

Distribution	Loading rack Loading ramp Pipeline
Extraction	Drilling rig Mine Pump Quarry
Processing	Crushing mill Distillation unit Filtration bed Fractionating tower Rotary kiln
Production	Building way Fabrication building Fractionating tower Reactor building Rolling mill Saw mill
R & D	Laboratories Test area Wind tunnel

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Examples for 5 b. Support Facilities

Transshipment facilities	Building Container Open Shed
Storage facilities	Ammunition Building Container Dry products Gas Open POL Shed Silo Warehouse
Administration	Control building Accommodation Offices
Access and Approach	Rail Road Water Air Pipeline
Terrain (if tasked) Decoy Unknown	

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CATEGORY 17: POWER INSTALLATIONS

Examples for 1b and 1 c.

Distribution Production Unknown	Alternative power Electric power Hydroelectric Nuclear Thermal Decoy Other (to be specified) Unknown	Boiling water Coal Diesel Gas Gas Turbine Geothermal High Dam Low Dam Oil Peat Pressure Pylons Recycling Solar Substation Switchyard Transformer Yard Wave Wind Wood Other (to be specified) Unknown
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Examples for 5 a. Primary Facilities

Main buildings	Boiler house Condensor Generator hall Heat exchangers Reactor building Reflectors Solar collectors Station control building Turbine hall Turbine\Generator hall Wind turbine Windmill
Penstock system	Anchor Pier Penstock (buried/not buried) Surge tower Valve house
Transformer switch yard	Power tensions tower Switch house Transformer yard
Cooling	Cooling tower battery Cooling water inlet Cooling water outlet Fuel rod cooling pod Pump/valve house Spray pounds Venturi cooling tower

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Examples for 5 b. Support Facilities

Storage	Basin (precise type) Nuclear waste Pumped storage Stock pile Tank (precise type and number) Trash (recycling)
Other Buildings	Administration Accommodation Workshop
Coal preparation plant	Coal handling Coal treating Conveyor belt system
Water purification plant	Water pounds
Stacks	Electrostatic precipitator Plant stack Smoke stack Waste stacks
Other facilities	Ash handling plant Cranes Pipe line Pump house Valve house
Access and Approach	Rail Road Water Air Pipeline
Terrain (if tasked)	
Decoy	
Unknown	

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CATEGORY 18: URBAN AREAS / HABITATIONS

Examples for 1b and 1 c.

Civilian Mixed Unknown	Camp Habitation Urban Area Decoy Other (to be specified) Unknown	City Village Hamlet Encampment Refugee camp Work camp Improvised shelter Other (to be specified)
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Examples for 5 a. Primary Facilities

Administration facilities	Administrative building Local government building Police station Security force building
Storage / Supply facilities	Food storage Food tent Mess tent POL distribution POL storage Water storage Water supply Water treatment
Medical facilities	Hospital Medical center Medical tent
Communications facilities	Telephone commuturs Communication center Communication building Communication tent
Other facilities	Bus station Industrial facilities Rail facilities School building School tent

Examples for 5 b. Support Facilities

Access and Approach	Rail Road Water Air Pipeline
Terrain (if tasked) Decoy Unknown	

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CATEGORY 19: SPECIFIC STRUCTURES

Examples for 1b and 1 c.

Military Civilian Mixed Unknown	Administrative Banking/financial Commercial Culture Diplomatic Education Health Media/Communication Religious Research/testing Residential Sport Decoy Other (to be specified) Unknown	Administration building Ambulance station Bank Burial site Cathedral Cemetery Church City Hall Commercial building Court House Customs Offices Department store Dispensary Embassy/legation/consulate building Exchange Fire station Government building Gymnasium Hospital Hotel Library Market place Monastery Mosque Museum Nursery Palace Police station Print works Prison Research and test centre Residential building School Stadium Synagogue Temple TV / Radio station University Other (to be specified) Unknown
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Examples for 5 a. Primary Facilities

Storey	Roof	Shape	Materials
Single Two Three, etc Multi	Butterfly Clerestorey Curved Deck Flat Gambrel Hipped Multi curved Multi ridge Near flat Ridge Sawtooth Sloped	Circular Composite Hollow square Horseshoe Multiple arm Offset block Rectangular Square Triangular E shaped F shaped L shaped T shaped U shaped X shaped	Concrete Glass Masonry Steel Stone Timber Mixed (to be specified if possible) Unknown

Examples for 5 b. Support Facilities

Parking Power supply Communication supply Access and Approach Terrain (if tasked) Other (to be specified) Decoy Unknown	Rail Road Water Air Pipeline
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