Photographic Interpretation Handbook, United States Forces: Section 02 Interpretation Check Lists

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2. LOCATION. Distance and direction from nearest town.

3. ALTITUDE. Height above sea level of airdrome.

4. LANDMARKS.
   a. Railroads: RR junctions, bridges, and terminals
   b. Rivers: Bends, junctions
   c. Lakes
   d. Mountains
   e. Cities and towns

5. FLYING OBSTRUCTIONS.
   Any hazards to low flying that exist near the landing ground. High hills within 10 miles of the field would be included.

6. RUNWAYS.
   a. Direction (two opposite compass points)
   b. Length and width
   c. Surface
      (1) Paved (all weather)
      (2) Sodded strips, graded earth, etc.,
      (Serviceability limited by weather)
   NOTE: When runways are not defined, give length and width of landing areas.
   d. Area surrounding runways
      (1) Surface
      (2) Drainage - (anything affecting serviceability)

7. HANGARS AND WORKSHOPS.
   a. Number
   b. Size
   c. Location

8. DISPERAL AREA AND FACILITIES.
   a. Perimeter track and taxiways
      (1) Surface and width
      (2) Area dimensions within P.T.
   b. Location of dispersal areas
   c. Blast shelters, hangarettes, revetments, hard standings
      (1) Size and number
      (a) Small (accommodates wingspan of 50' or less)
      (b) Medium (accommodates wingspan of 50' to 100')
      (c) Large (accommodates wingspan of over 100')
   d. Servicing areas. (Tarmacs, aprons)

9. STORAGE.
   a. Ammunition
   b. Fuel
   c. Water
   NOTE: Location, size, and method of storage.

10. BUILDINGS.
    a. Location
    b. Use
       (1) Administration
       (2) Barracks and Quarters
          (a) Number, size, location
       (3) Supply warehouses
       (4) Power house
       (5) Any others that can be determined

11. NIGHT LANDING FACILITIES.
    a. Location
    b. Type
       (1) Visual Lamps
       (2) Perimeter or boundary lights
       (3) Contact lights
       (4) Flare paths
       (5) Beacons and floodlights

12. RADIO.
    a. Location
    b. Description
       (1) Radar types
       (2) RDF types

13. DEFENSE.
    a. Location (within two miles of A/D)
    b. Type
       (1) AA Guns (Heavy, light)
       (2) M/G positions
       (3) Searchlights
       (4) Barrage Balloons
       (5) Strong points
       (6) Mine fields
       (7) Wire
       (8) Trenches
       (9) Obstructions (within perimeter track)
          (a) Moveable barriers on runways
          (b) Plowed areas
          (c) Trenches

14. TRANSPORTATION.
    a. Railroads
    b. Highways
    c. Water

15. CAMOUFLAGE.
    a. To be added to each section when applicable. Give method and materials used together with extent of completion.
    b. Dummies and decoys. Give description of method and materials used together with its location, distance and direction in relation to airdrome and its orientation.
16. MISC. FACILITIES
   a. Field markers
   b. Landing 'T's'
   c. Compass swinging base
   d. Transformer stations
   e. Target butts
   f. T/O rifle ranges
   g. Motor pool

17. EXPANSION POSSIBILITIES
   Report possibilities of expanding field or runways. Give direction and distance. State reasons which would definitely limit expansion.

18. AIRCRAFT ACTIVITY
   a. Number
   b. Name
   c. Location
   d. Damaged A/C

19. OTHER ACTIVITY
   a. Expansion
   b. Repair and maintenance

20. REMARKS
   Comparison with previous coverages, development, etc.

SEAPLANE BASES
   Note catapults, cranes, buoys, boats; also all pertinent items listed under 1. to 70.

BEACHES
   (Adequate photographic reconnaissance of beaches requires frequent sorties under various conditions of weather and tide with further accurate recording of weather and time.)

1. THE BEACH
   a. Location
      (1) Latitude and longitude of centre.
      (2) Map and chart references.
      (3) Landmarks visible from seaward.
   b. Dimensions
      (1) Length of portion with clear sea approach.
      (2) Width of bare portion at specified state of tide.
      (3) Average distance from high to low water line.
   c. Gradient
      (1) High water line to 4 ft. below low water line.
      (2) Inboard of high water line.
      Note: If gradient varies tabulate gradient or indicate it on a sketch for various sectors of the beach.

2. SWELL AND SURF CONDITIONS
   a. Distance from beach to outermost breakers
   b. Relative location of separate lines or patches of breakers having unbroken water between them.
   c. Number and location of lanes of unbroken water through the surf area with approximate width of the lanes and whether or not they are straight or circuitous.
   d. Description of severity of surf summarized by the month or by seasons, including maximum and average height of breaking waves measured from trough to crest, average number of days of calm surf conditions per month or season, and surf conditions for small boats as learned from local fishermen.
   e. Any available data kept locally on characteristics of swell and surf.

3. HYDROGRAPHIC INFORMATION
   a. Nature of bottom, whether rock, sand, shell, mud or smooth.
   b. Contour lines to 3 ft. and 4 ft. below the low water line.
   c. Reefs, bars, shoals, rocks
   Note: Piles of sea shells at the high tide line indicate:
      (1) The sand is soft, hence shifting (be alert for sudden appearance of outer shoals where none appear at present).
      (2) That the gradient of the beach is gradual and that the water off the beach is shallow. Charts showing water depths and shoals near the beach lines are frequently in error because shoals shift after storms or heavy surf; shoals tend to appear and grow larger during the stormy season and to smooth out during the calm season.
   d. Anchorage Areas
      (1) Distance from shore.
      (2) Navigation aids.
      (3) Use by local shipping
      (4) Security
         (a) Weather
         (b) Underwater defenses

2.04

CHECK-OFF-LIST

RESTRICTED
e. Tides and currents.
f. Water temperatures.
g. Location of telegraph cables.

4. TERRAIN INLAND AND ON FLANKS OF BEACH
   a. Topography
      (1) Dunes, cliffs, hills and peaks
      (2) Natural and artificial waterways
      (3) Swampy land
      (4) Discoloration and/or small deltas indicating presence of fresh water streams
      (5) Cover for troops.
b. Possible exits.
   (1) Overland
   (2) Roads
c. Location emergency landing place for aircraft
   (1) Dimensions
   (2) Nature of surface
d. Location of nearest potable water in quantity
e. Location of telegraph, telephone, power lines or transformers
f. Railroads
g. Habitats

5. DEFENSES: ACTUAL AND POTENTIAL
   a. Coast defense batteries
   b. AA batteries
c. MG positions
d. Trenches
e. Land and water mines
f. Ammunition dumps
g. Command posts
h. Observation posts
i. Underwater nets

DESCRIPTION OF SHORES WITH REEF FEATURES

1. LOCATION OF AREA DESCRIBED
   a. Latitude and longitude
   b. Map and chart references
c. Photo references
d. Other reference
e. Landmarks visible from seaward

2. GENERAL DESCRIPTION

3. METEOROLOGICAL CONDITIONS
   a. Winds
   b. Air temperature
c. Cloud conditions
d. Precipitation
e. Miscellaneous

4. WATER CONDITIONS (GENERAL)
   a. Currents
   b. Water temperature
c. Miscellaneous

5. THE REEF AND REEF-FLAT
   a. Location with respect to shore
   b. Dimensions
      (1) Length along shore
      (2) Width to backshore bench
      (3) If reef is of barrier nature, give size and extent of barrier feature
c. Nature of reef and reef-flat
   (Irregular channeled outer limits, etc. Flat described as smooth, sandy, coral heads, etc. Note type of bottom beyond reef, if known.
d. Breaks in Reef
   Coral does not grow where water is too fresh, silty, or lacks turbulence.
e. Hydrographic Information
      (1) Gradient
      (2) Known depths, from backshore to deep water beyond reef.
      (3) Note and locate individual reefs, bars, shoals, and coral heads that might form obstructions.
   (4) Anchorage Areas
      (a) Distance from shore.
      (b) Navigation aids
      (c) Use by local shipping
      (d) Security
         1. Weather
         2. Underwater defenses

6. SWELL AND SURF CONDITIONS
   a. Locate surf zone with respect to both reef edge and backshore
   b. Relative location of broken water areas.
      (Indication of possible reefs and shoals which are not visible in photos.)
c. Lanes of unbroken water through surf area
   (1) Location
   (2) Dimensions
CHECK-OFF-LIST

DESCRIPTION OF SHORES WITH REEF FEATURES (CONT.)

d. Severity of surf at high and low tides, at various times of year, and during various weather conditions.
e. Near shore currents
f. Miscellaneous

7. THE BACKSHORE BEACH
   a. Location (specific location on shore)
   b. Dimensions
   c. Gradient
   d. Physical Consistency
      (1) Sand
      (2) Shingle
      (3) Rock
      (4) Mud
   e. Vegetation (if present)
   f. Miscellaneous
   Note any beaches separately that lack an appreciable reef fringe, following handbook outline. These would generally be the best landing beaches.

8. THE LAGOON
   a. Location
   b. Extent
   c. Entrances
      (1) Location
      (2) Size
      (3) Depth
      (4) Obstructions
   d. Hydrographic Information
      (1) Nature of bottom
      (2) Known depths, gradient
      (3) Reefs and shoals, etc. (separately described and located)
      (4) Anchorage areas
         (a) Distance from shore
         (b) Navigation aids
         (c) Use by local shipping
         (d) Security
            (1) Weather
            (2) Underwater defenses
            (e) Tides and currents
            (f) Miscellaneous

9. TERRAIN INLAND AND ON FLANKS OF BEACHES
   a. Topography
   b. Vegetation
   c. Routes of movement to and from beaches (communication to beach)
   d. Locations for possible airplane landing sites.
   e. Possible water supply
   f. Location of telephone, telegraph, power, etc.
   g. Roads and railroads
   h. Habitats
   i. Miscellaneous

10. DEFENSES
    a. Coast defenses
    b. AA batteries
    c. MG positions
    d. Trenches
    e. Land and water mines
    f. Ammunition dumps
    g. Command posts
    h. Observation posts
    i. Barbed wire
    j. Underwater defenses
    k. Miscellaneous

DAMAGE ASSESSMENT

1. TARGET OF PRECISION BOMBING
   This usually includes one of the following specific targets:
   a. Industry
   b. Ships
   c. Port facilities (slips, U-boat pens, docks, warehouses, etc.)
   d. Transportation (stations, shops, railways, rolling stock, roads, etc.)
   e. Military installations (airdromes, camps, dumps, fortifications, etc.)
   SUMMARY: Give a brief statement on the severity of damage, and mention any specific, important buildings or installations which have been damaged or destroyed.
   REPORT: If damage in target area is appreciable, issue an annotated print. Describe and number each item of damage and state that the numbers refer to items on print No. distributed. List damage to most important items first, maintaining as much order in the numbering of items as possible. (Example: 1. Power House, N. end destroyed by direct hit.) If important buildings are not identified, describe or give dimensions in feet. (Example: 2. Building, shed type, 400' x 250' destroyed by fire.) When description of damage to target is complete, annotate (if shown on print) and describe any other important points of damage outside the target area.

2. TARGET OF AREA BOMBING
   This may include all or some of the following:
   a. Industry
   b. Ships
   c. Port facilities
   d. Transportation
   e. Military installations (airdromes, camps, dumps, fortifications)
   f. Public utilities (gas, electricity works, etc.)
### SUMMARY:
A general statement on severity of raid over the whole area, with special reference to the area most severely damaged. Following the general comment, make a brief statement about important industries, ships, port facilities, etc., which may be destroyed or damaged.

### REPORT:
Itemize list of damaged targets under the following heads:

1. **INDUSTRIAL**
   - Name or type of industry
   - Location by District or Street
   - Statement of Damage
   - Print No.

2. **SHIPPING**
   - Naval Vessels, M/V's etc.
   - Location by Hafen or from Reference Point
   - Statement of Damage
   - Print No.

3. **PORT FACILITIES**
   - Docks, Slips, etc.
   - Location by Hafen or from Reference Point
   - Statement of Damage
   - Print No.

4. **TRANSPORTATION**
   - Stations, Yards, Rolling Stock, etc.
   - Location, District or pinpoint
   - Statement of Damage
   - Print No.

5. **MILITARY INSTALLATIONS**
   - Gun emplacements etc.
   - Location, District or pinpoint
   - Statement of Damage
   - Print No.

6. **PUBLIC UTILITIES**
   - Gas, Water, Electricity wks., etc.
   - Location by District or Street
   - Statement of Damage
   - Print No.

7. **PUBLIC BUILDINGS**
   - Administrative offices, City Halls, etc.
   - Location by District or Street
   - Statement of Damage
   - Print No.

8. **BUSINESS AND RESIDENTIAL**
   - Each area in acres; or, if scattered, state approximate number of fire or H.E. incidents.

9. **APPENDAGES**
   - Illustrations for reports on area targets should include one or two annotated photographs showing areas of concentrated damage. Print annotations should be described in an appendix to the main body of the report.

(a) In the case of very severe area bombing, a Damage Plot of the target may be issued, showing destroyed or damaged areas on a rotoprint of the area covered.
(b) Plans used.

10. **ELECTRONICS**
   - **A. RADIO**

   **SUMMARY:**
   A brief description as follows:
   1. **LOCATION.** (By geographic coordinates and/or by distance and direction from nearest town)
   2. **ANTENNAS.** (Number and type)
   3. **BUILDINGS.** (Number and type; i.e., large control, small generator, etc.)
   4. **POWER SOURCE.** (When determinable)

   **REPORT**
   1. **ANTENNAS.**
      a. Number, type of construction, and height
      b. Arrangement of Arrays
   2. **BUILDINGS.**
      a. Control
         (1) Site location in general area
         (2) Complete description of size, shape, type of construction
      b. Associated Personnel
         (1) Site location in general area
         (2) Complete description of number of buildings, size, type of construction, usage when determinable, revetments, if any.
   3. **CABLE LINES.** (General description of location, from towers to control and/or generator building, etc.)
   4. **POWER SOURCES.**
      a. Generator/transformer building, location and dimensions
      b. High tension line for outside source.
B - RADAR (AND D.F.)

SUMMARY: A brief description as follows:
1. LOCATION. (By geographic coordinates and/or by distance and
direction from nearest town)

2. RADAR SETS. (Number and type)

3. BUILDINGS. (Number and type: i.e., control building for each
set, personnel building)

4. POWER SOURCE. (Outside source or independent)

REPORT

1. RADAR SETS.
   a. Location of each set in the area
   b. Number of each type of set with name of set
   c. Size of set, shape, evidence of operation
   d. Revetment, description if applicable

2. BUILDINGS.
   a. Control
      (1) Location in area
      (2) Complete description of size, shape, type of construc-
      tion, revetments, if any.
   b. Associated Personnel
      (1) Site location in the general area
      (2) Complete description of number of buildings, size, type
      of construction, usage when determinable, revetments,
      if any.

3. POWER SOURCE.
   a. Complete description of generator buildings, power lines, etc.

GROUND FORCES

SUMMARY: A brief statement summarizing the amount and type of defenses
in the area covered.

REPORT

1. TERRAIN
   a. Coastal Terrain
      (1) Coastal terrain
      (2) Beaches
         (a) Exits for wheeled and tracked vehicles
         (b) Exits for tracked vehicles only
         (c) Exits for infantry only

b. Inland Terrain
   (1) Watershed
   (2) Natural cover
   (3) Vegetation
   (4) Man made features
   (5) Communications

2. MILITARY DEFENSES
   a. Coastal Defense (Gun batteries only)
      (1) Location
      (2) Number
      (3) Calibre and type mounting
      (4) Spacing and layout
      (5) Field of fire
      (6) O.F.'s and fire control
      (7) Supporting defenses
      (8) Ammunition
      (9) Crew's quarters
      (10) Transportation facilities
      (11) Terrain
      (12) Approaches
      (13) Conspicuous landmarks

b. Major Defenses (with field guns or larger)
   (1) Location
   (2) Type and description
   (3) Field of fire
   (4) Supporting defenses
   (5) Transportation and communication facilities
   (6) Terrain
   (7) Approaches
   (8) Conspicuous landmarks

c. Minor Defenses
   (1) Anti-tank and anti-mechanized
      (a) Location
      (b) Terrain
      (c) Type and description
      (d) Extent
   (7) Anti-personnel
      (a) Location
      (b) Terrain
      (c) Type and description
      (d) Extent

   (3) Minor defenses
      (a) Location
      (b) Type and description
      (c) Extent

   d. Barracks and Hutted Camps
     (1) Quarters
        (a) Location
        (b) Number, size, and type of buildings
        (c) Capacity
        (d) Auxiliary buildings
## CHECK-OFF-LIST

**GROUND FORCES (cont.)**

### Supply Areas
1. Location
2. Number, size, and type of buildings
3. Material stored
4. Capacity

### Supporting Defenses
1. Location
2. Type and description
3. Extent

### Power and Water Supply
1. Location
2. Type and description

### Communications
1. Location
2. Type and description

### Transportation Facilities
1. Location
2. Type and description
3. Capacity
4. Signs of use

### Supply Depots and Dumps
1. Buildings and storage facilities
   - Location
   - Type and description
   - Material stored
   - Capacity
2. Supporting Defenses
   - Location
   - Type and description
   - Extent
3. Transportation facilities
   - Location
   - Type and description
   - Capacity
   - Signs of use

### Anti-aircraft
1. Gun positions
   - Location
   - Number of guns
   - Calibre and type mounting
   - Spacing and layout
   - Type and location of fire control
   - Supporting defenses
   - Ammunition
   - Crews quarters
2. Searchlights
   - Location
   - Number
   - Controls and power

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### Barrage Balloons
1. Location
2. Number
3. Size
4. Spacing

### Air Warning Service
1. Location
2. Type and description

**NOTES:** This form is for use only on first coverage of an area. Where prior coverage has been made, only changes, additions, and subtractions will be reported. The order in which general headings will be covered will vary to meet existing conditions.

**REFERENCE:** TM 30-480, TM 5-246

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### INDUSTRIAL

**SUMMARY:**
1. LOCATION: (By geographical coordinates and/or by distance and direction from nearest town)
2. TYPE OF PLANT AND PRODUCTS: (As specifically as the available information will allow)
3. CHARACTERISTICS OF SITE: (Shape, largest dimensions, geographical landmarks in vicinity, such as roads, canals, etc.)

**REPORT**
1. TRANSPORTATION FACILITIES
   a. Type of transportation
   b. Location of facilities in relation to plant site.
2. POWER FACILITIES
   a. Outside power sources (high lines and transformer yards, location and dimensions: gas and steam lines)
   b. Internal power plant, number and location. (Location may be indicated by reference to the keyed plan. Size of buildings, and number of stacks, if any. Type of fuel and size and location of stock pile or storage tanks which contain it. Approximation of power output, if possible.)
3. ANALYSIS OF PLANT. (Detailed analysis of each plant installation)
   a. Buildings
   b. Outdoor processing equipment
   c. Storage tanks
   d. Stock piles
   e. Handling equipment
   Give location (may be indicated again by reference to keyed plan),
   size of each installation, and, if possible, its function also.

4. PLANT PROCESS.
   If the process used in the plant is complex and not readily
   understandable from the detailed analysis of the plant in Section 3,
   above, a brief description of the general process used should be
   added either here or immediately before Section 3.
   A flow diagram may be included to clarify this description.

5. PRODUCTION OF PLANT. (Including state of operation) Estimate, if
   not available from other sources.

APPENDIX:
1. CAMOUFLAGE. (General description extent, methods and materials
   used)
2. DEFENSES. (General description, location)
   The report must be accompanied either by annotated photographs or
   preferably by photographs and a keyed overlay or enlarged plan drawing.

NOTE:
The suggested report form is not a fixed guide, since industrial
reports vary more than any other type. The principal factor in this
variation is the amount and quality of ground information available.
All possible ground sources must be checked before the report is writ­
ten, since in some cases a report is of little value if it is derived
solely from interpretation of aerial photographs. The most essential
information, for instance, in any industrial report is a statement of
the type of plant and what it is producing. This information is often
obtainable only from ground sources. If, however, ground information
is not available, the report should none the less be made as complete
as possible.

NAVAL AND MERCHANT SHIPPING

SUMMARY: List all vessels present under following headings:
1. Naval Vessels
2. M/V's over 200'. Differentiate where possible AP's, AK's, and
   AO's, listing lengths and total gross tonnage.
3. M/V's under 700'.
TRANSPORTATION

SUMMARY: Give a general description of the transportation facilities in the area covered by the photographs.

A. RAILROADS

REPORT

(1) TRACKAGE--For each main line, state:
   a. Location and direction.
   b. Gauge and number of tracks (on main line).
   c. Bridges, culverts, tunnels. Location, size and type of construction.
   d. Cuts and Fills. Location and size.
   e. Electrification (if any present). Description of catenary system; number, location and size of transformer yards, if any; source of power discernible.
   f. Activity. Direction of motion of trains, number and type of locomotives and cars.

(2) RAILROAD YARDS--For each yard, include unusual features of layout.
   a. Location and direction of main axis.
   b. Size and capacity of yard--maximum dimensions, number and length of tracks, total trackage, capacity.
   c. Service and repair installations.
      (1) Engine house. Location in yard, type (round, rectangular, etc.), size, capacity.
      (2) Coal, water, and sand stations. Location and type of construction.
      (3) Car repair shops. Location, function (if discernible), size, capacity.
      e. Loading installations
         (1) Station (passenger or freight). Location in yard, dimensions, number and length of platforms or tracks.
         (2) Other loading facilities. Team tracks, rail and water loading facilities.
   f. Activity
      (1) Percentage of yard occupied
      (2) Locomotives. Number and type
      (3) Cars. Number and type; loaded or empty; type of load, if discernible.
      Note particularly military rolling stock, RR flat cars, or military trains.
      NOTE: If reporting on a large yard, give total number of cars by sections. (e.g. receiving, dispatching, storage sections"
   If not, give total number in yard.
   (4) Complete trains. Number and composition; directions of motion; location (if large yard only) by sections of yard.
   (5) Special activity. Locomotives and cars being serviced or under repair; cars loading or unloading.
   (6) Change in activity, since last cover.

B. HIGHWAYS

1. MAJOR HIGHWAYS
   a. Highway system. Location, direction, surface type, width in feet, number of lanes.
      Also state any special conditions present, particularly those affecting military movements, such as road repair and construction, road blocks (size and type), maximum gradients of roads in mountainous country.
   b. Traffic circles, clover-leaf intersections, and other important road junctions. Location, type of junction, serviceability.
   c. Bridges, culverts and tunnels. Location, size and type of construction.
   d. Cuts and fills. Location, size.
   e. Minor connecting roads.

C. CANALS

1. CANAL NETWORK--For each canal, give the following information:
   a. Location, direction and width (in feet).
   b. Locks. Include for each lock series: Location, lift (in feet); number of steps; size of lock basin; size and construction of lock gates, description of power facilities; state of activity.
   c. Basins. Include for each: Location, size, berthing spaces, loading facilities, state of activity, (barges in storage basins, barges loading and unloading).
   d. Other loading points (along canal). Report as for basins.

2. BRIDGES AND AQUEDUCT OVERPASSES.--State for each: Location, size, construction (lift or fixed), clearance above level of canal.

3. ACTIVITY.
   a. Traffic on canal. Number of barges, loaded or empty, type of cargo, if discernible, stationary or moving, direction of movement; stored loading or awaiting passage.
   b. Change in activity, since last cover.
1. Give print numbers covering each installation following its description.

2. Every important installation, such as bridges, road or rail junctions, etc., should be located by map or grid coordinates.

3. This report will very rarely be submitted in its entirety. Usually one section will be described, such as the road net or canal system of an area, or even one installation only, such as a railroad station, a marshalling yard, or a canal lock series. Again, a very common type of transportation report is one which describes only the transportation activity of a certain area over a period of time, and omits all reference to fixed installations. The whole form is given here only in order that the interpreter may be able to extract from it those sections which fit the particular requirements of the occasion.

SAMPLE NAVY P.I. REPORT HEADING

PHOTO INTERPRETATION REPORT NO. 3

LOCALITY — Wake Island: 166° 35' E — 19° 17' N.

SORTIE — ENT 2-M1

DATE TAKEN — March 15, 1944

MEAN TIME — 1530

FOCAL LENGTH — 12"

ALTITUDE — 500'

CONTACT SCALE — 1:5000

COVERAGE (AREA) — (Actual area covered)

MAP REFERENCE — HO Chart 123

LAST COVER — Dec. 19, 1943

ENCLOSURES — (A) Overlay

SUMMARY

DETAIL OF REPORT

PHOTO REFERENCE

2.20