


DIGITAL PLOTTING



U Thant Sin Oo
Staff Officer
Digital Photogrammetric Section
Survey Department

Activity contents

Definition of Digital Plotting is acquisition of topographic data based on the Digital Plotting application by using the aerial triangulation result and aerial photographs

Work flow of Digital Plotting

1. preparations
↓
2. Digital Plotting
↓
3. Quality Control

1. Preparations

- (1) Environment preparation
- (2) Making interpretation card
- (3) Confirmation of triangulation results
- (4) Confirmation of plotting covered area
- (5) Confirmation of the other information

(1) Environment preparation



Confirmation of map symbol and its application rule

- decision of acquisition items & order
- design of map symbol

Circumstances maintenance and confirmation

- confirmation of the interchangeable data
- selection of Digital Plotting system
- digitalization of map symbol
- decision of classification code & command (Macro)
- build local area network for mass production

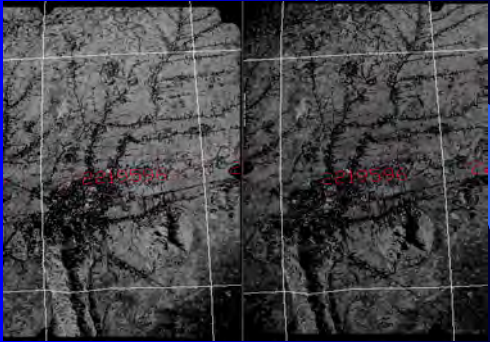
(2) Making Digital Plotting acquisition basis cards

Digital Mapping Acquisition basis Card. ^o (1:50,000) ^o	
Lake / Pond ^o	
(Left side)	(Right side)
	
code no = 206	color no = 1
command key = PND	

(3) Confirmation and preparation of aerial triangulation results

- Visible check of remaining parallax in three dimensional stereo model
- An existing control point is observed by Digital Plotting system and confirmed that point is within tolerance value
- Compare between observed value & existing control point

(4) Preparation of plotting area for each model



(5) Confirmation of the other information

- ❑ Information of control points
- ❑ Classification of road information
- ❑ Annotation information
- ❑ The other digital data

2. Digital Plotting

Plotting Material

- ☞ Digital Aerial Photo Image
- ☞ Aerial Triangulation Result & Description of GCP
- ☞ Table of Symbol & Application
- ☞ Digital Plotting Manual

Instrument to be used

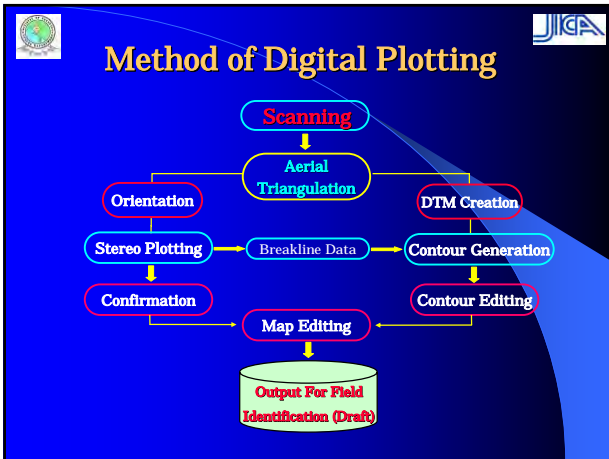


DVP workstation Summit Evolution workstation

Absolute Orientation Result Before Plotting

- **Dx = < 0.7 m (Average)**
- **Dy = < 0.7 m (Average)**
- **Dz = < 0.8 m (Average)**

photo scale = 1: 50,000
 image resolution = 1270 dpi
 pixel size = 1inch /dpi = 25.4mm / 1270 = 20 μ
 ground pixel size = photo scale * p size = 1m
plan accuracy (x , y) = 70% of ground pixel size
 vertical step = focal length / base * g p size = 153.19 / 90 * 1 = 1.7
height accuracy = 50% of vertical step = 0.85 m



- ### Order of Stereo Plotting
- 🏠 River and its facility
 - 🏠 Road and railway
 - 🏠 Buildup Area & Houses
 - 🏠 Vegetation & Land use cover
 - 🏠 Contour line and annotation



- ### Embankment
- Embankment line & cutting line are consider if the slope height is 8 m and above.
 - Embankment for road
 - Cutting for road
 - Embankment for railway
 - Cutting for railway

Houses

- **House symbol and others**
- **Classification of building**
- **Monacquired easily by the photo-interpretation.**
- **Chinese temple**
- **Airport / airfield**


Public facilities



Other small objects

- Pipe line (oil, water)
- Oil well
- Pipe line (oil, water) were principally interpreted by aerial photo depend on their size. But other objectives could not interpreted during Digital Plotting.
- Antenna mast
- Beacon
- Light house
- Monument
- Water well
- Water tower
- Spring
- Power transmission line

Vegetation



• **Mangrove** cultivation boundary. **Cultivation**

Topography / Contour line

- Contour referred to effect of DTM measurement and acquired it with a Digital Plotting.
- Intermediate contour
- Index contour
- Supplementary contour
- Relative height

Height information

Reference Point

- Spot height must be
- Triangulation station
- Bench mark
- Spot height (symbol)
- Spot height (text)
- Relative height

134
77r

5. Quality inspection

- inspection result is recorded in the quality control sheet.
- Principal inspection are following four types
 - (1) Check of each and every model
 - (2) Validation of logical consistency
 - (3) Validation of accurate time and position
 - (4) Validation of attribute
- Visible check of confirmation progress
- Stereo editing of each mapsheet

Previous sheet **Proposal sheet**

Put Digital Plotting data on existing map

Proposed check sheet

Anaglyph Model

Proposed check model

Result of Digital Plotting work

- ❖ Result of Digital Plotting
- ❖ Digital topographic data
- ❖ Out put for field identification
- ❖ Digital Plotting acquisition basis card
- ❖ Orthophoto image data

Output For Field Identification

Map Sheet No. 1694_09
Draft 1:50000 Scale

