Lecture 4
Cartography II- Geo 154

FT Okyere

Assignment progress?

- Get the data
- Get to work!

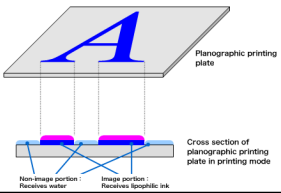
Printing plate preparation

- Deep-etch Solution
  - Concentrated solutions of salt
  - Contain Strong acids- eating into bared metal to provide a deep-etch
  - E.g. GATF fomula for aluminium and stainless steel
    - Calcium Chloride- $CaCl_2$
    - Zinc Chloride $ZnCl_2$
    - Ferric Chloride $FeCl_3$
    - Hydrochloric Acid HCl and
    - Cupric Chloride $CuCl_2.2H_2O$

Deep-etch Solution

Printing plate preparation

- Plate Etches (Different from deep etch)
  - Used for desensitizing the plate- i.e. make non-image areas, water receptive
  - Plate etches are used on deep-etches and albumen and casein surface plates
  - GATF (Talk about Gum Arabic later)

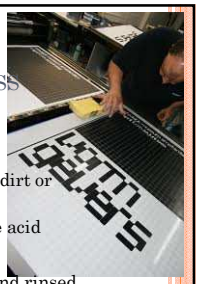


Making a printing plate

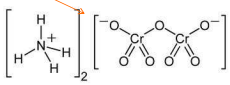
Making a printing plate

- Use Negative or Positive original
- In-contact with printing plate- MR->MR and RR->RR
- What are the steps involved in the
  - Negative plate making process?
  - Positive plate making process?

Negative plate making process



1. Cleaning the Plate
   - Running water used to wash
   - 5% Acetic acid solution 2mins to remove dirt or graining sludge
   - Washed again to remove remnants of the acid
2. Pre-etch(ease development)
   - Plate is sponged with pre-etch solution and rinsed with water
   - Solution made of 'Gum Arabic', ammonium dichromate, phosphoric acid and water



Negative plate making process- Ammonium dichromate volcano

Negative plate making process

3. Coating the plate
   - Clamp the plate in a whirler
   - Apply albumen + ammonium dichromate
   - Dry gently
4. Exposure
   - Expose negative original in-contact with plate (emulsion side down)[where would light come from?]
   - Transparent parts of negative are hardened
   - Coating unaffected are soft and soluble

Negative plate making process

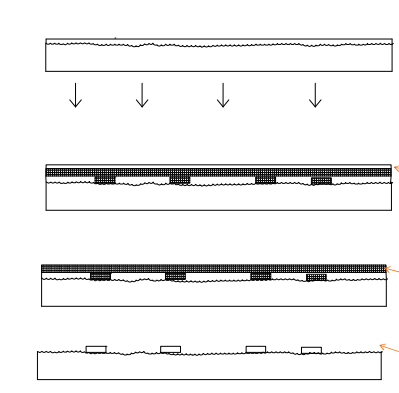
5. Applying the Ink
   - After exposure cover the plate evenly with developable ink
   - Rub over whole surface and polish dry
   - Apply French chalk- Ensure dryness

6. Developing the plate
   - Under running water develop
   - Gentle swabbing with cotton wool

Negative plate making process

7. Brunak Treatment
   - (Increases wettability of non-image areas)
   - Insert plate in to Brunak solution for 30 seconds
   - Rinsed under water until no more colour leaves the plate.
   - Dry it up
8. Gumming up the plate
   - Use Gum Arabic
   - Protects the non –image areas
     - Maintains constant viscosity
     - Excellent desensitizer for lithographic printing plates
     - Prevents oxidation on plate
- NB: Image is slightly raised and as such printing runs are no suitable

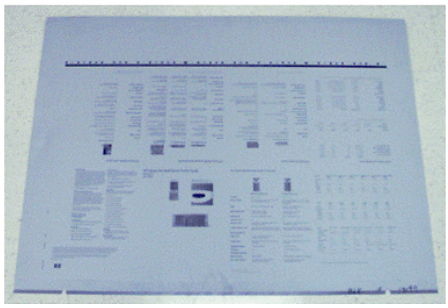
NEGATIVE PLATE MAKING PROCESS



POSITIVE PLATE- MAKING – ANODIZED ALUMINIUM(AA) DEEP- ETCH PLATE

1. Cleaning the plate
   - H_2SO_4 - 3%
   - Protective gum by manufacturer is removed in the process- making AA bare
   - Rinse on both sides with H_2O
2. Coating the Plate
   - Place on whirler
   - Coat with light sensitive solution
3. Exposure
   - Positive Original in contact
4. Developing
   - Clear out the image areas
5. Deep-etching
   - Image is the bared metal of the plate(AA)
   - Apply deep etch to bite to produce better key for the application of ink.

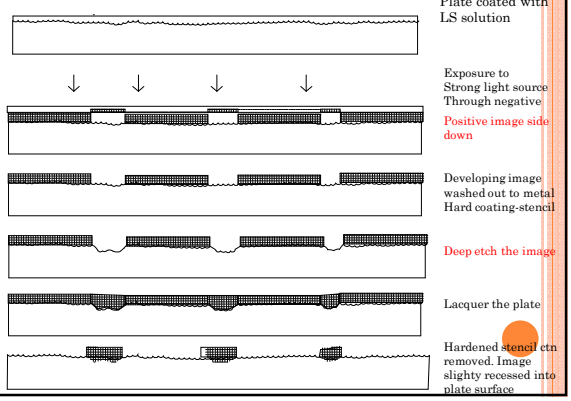
AN OFFSET LITHOGRAPHY PRINTING PLATE



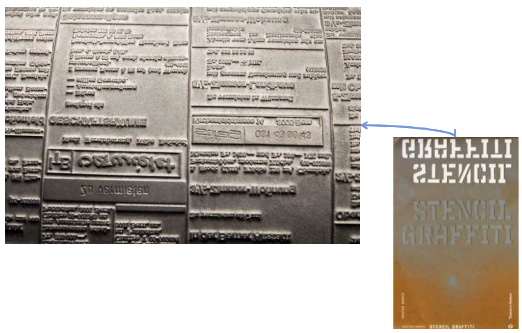
POSITIVE PLATE- MAKING – ANODIZED ALUMINIUM(AA) DEEP- ETCH PLATE

6. Cleaning the plate with alcohol
   - Removes traces of deep etch solution
7. Stopping out
   - Use stopping out solution (stop out varnish)
   - Paint over blemishes and
   - Give a further exposure to harden NI areas.
8. Lacquering the Plate
   - Apply lacquer to provide a better key for ink
   - A thin layer of this
9. Inking up the plate
   - Protecting Ink is applied (more protection)
   - Greasy
   - Dried using powder (French or English?)
10. Removing stencil
    - Made up of the hardened light sensitive coating
    - Use weak H_2SO_4
    - Clear the plate- Save inked image areas
11. Gumming up the plate to provide protection
12. Send >>>>>printer- Do 1000,000 runs!

POSITIVE PLATE- MAKING – ANODIZED ALUMINIUM(AA) DEEP- ETCH PLATE



STENCIL- LIKE



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- Questions