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REPORT ON THE TECHNICAL QUESTIONS

RELATING TO MAP PRODUCTION AND REPRODUCTION

Paper submitted by the Government of the Tunisian Republic

REPORT ON THE TECHNICAL QUESTIONS RELATING TO MAP PREPARATION AND REPRODUCTION [1]

The present report deals with the problems that arose during the preparation of the block of four sheets on the scale 1/50,000, Nos 148, 149, 159 and 160. This was the very first Tunisian experience in this field.

On account of the means available on the one hand and of the requirements for quality and time limits on the other, it was decided to adopt compilation on 1/1 scale of publication in four colours. This choice facilitates later the preparation of plates by the "scribing" method.

The drawing of the geographic features was done with the coordinatograph of the Wild A 8 stereoplotter.

The original stereocompiled manuscript was cut into two and monochrome reproduction was obtained by a copy on plastic (opaque Rovylene 50/100). Then assembling the two parts in question with adhesive cloth tape, it was possible to reduce further the time factor, by avoiding the operation "bromide on coated zinc", which it is impossible to execute satisfactorily in the immediate future.

Additional work for the four sheets was achieved in a relatively speaking record time. Started on 15th May 1966, it was completed by 6th August 1966.

It consisted of :

- Stereoscopic study and drawing, observation and drawing of the route on the information notebook.
- Planimetric field plane-table and levelling operations carried out simultaneously.
- Correction, resetting and bringing up to date of documents (maps, overlays and notebooks ...) at the Office.

A rational programme for the execution of cartographic work - of which a diagram (Annexe I) is affixed - has enabled the department to overcome the difficulties met with during the various stages.

The very important problem of transliteration has posed itself to us as well.

1/ Translated by the Government of the Tunisian Republic

The transcription of Arabic names on our maps had to be phonetically intelligible.

Under the supervision of the mapping Committee, the Toponymy Commission has taken the following measures :

TRANSLITERATION

Latin signs and characters giving an accurate transcription of the pronunciation of Arabic words in Tunisia.

ARABIC		LATIN	EXAMPLE
ع	= ' a	= ' A	El ' Alia
ع	= ' ou	= ' OU	Jbel ' OÛn
ع	= ' i	= ' I	' Aïn Oqtor
غ	= gh	= GH	El Ghâba
ق	= q	= Q	El Quantara
ح	= ḥ	= Ḥ	Hoûmet Es-Souq
خ	= kh	= KH	Machyakht
ث	= th	= TH	Sidi Thâbet
ظ ض ذ	= dh	= DH	Sidi Dhâher
Stress		= ´	Arkou

In pursuance of this decision, we have had to draw by hand the signs which do not exist in typography.

Once the list names was completed, and the choice of groups and face of type made, a typographical impression on coated paper and a photographic reproduction on a stripping film 1/100, eventually followed by a reproduction, enabled us to set up the lettering plate by pasting up the names on actinic lined astralon 25/100.

To ensure a degree of homogeneity and avoid omissions, the draughtsmen were instructed to use the process of coat scribing (enclosed in Annexe II) for the various fundamental plates (blue, black, brown).

The base map of Tunisia being on the 1/50,000th scale, we have thought it useful to include as much detail as possible, however, to avoid spoiling the clarity and sharpness of the map, a summary generalization has been adopted for fairly dense regions.

It should be noted here that the diazo process was satisfactorily used for the impression of the provisional base on the scribing coats.

As coating was not possible, we have decided to represent sand (brown or blue) on the same coat for scribing, although it could also be represented by drawing on a positive film, on the reverse side of the corresponding fundamental plate.

Owing to the fairly important hygrometric variations characteristic of the country's climate, and due to the lack of air conditioning in our workshops, the registration of the marks has proved somewhat difficult.

As a temporary measure against these difficulties, one of the first precautions taken was to handle all the drawing and impression bases, i.e. scribing coats, peeling coats, lined astralon, etc ... in the same atmospheric conditions.

Before any photographic operation, the unexposed film was hung in the dark room for ton to fifteen minutes, which allowed it reasonable weathering before exposure. After developing, it was normally dried.

The checking and the immediate use of the film soon afterwards made it possible to minimize even further the effect of variations of temperature and to ensure an acceptable degree of dimensional stability.

Moreover, the small number of pulls, sufficient for the need of the country, permits printing in one day a sheet in five colours, on monochrome offset. Stocking the reams close to the offset machine, and passing them through the machine twice without printing are equally beneficial.

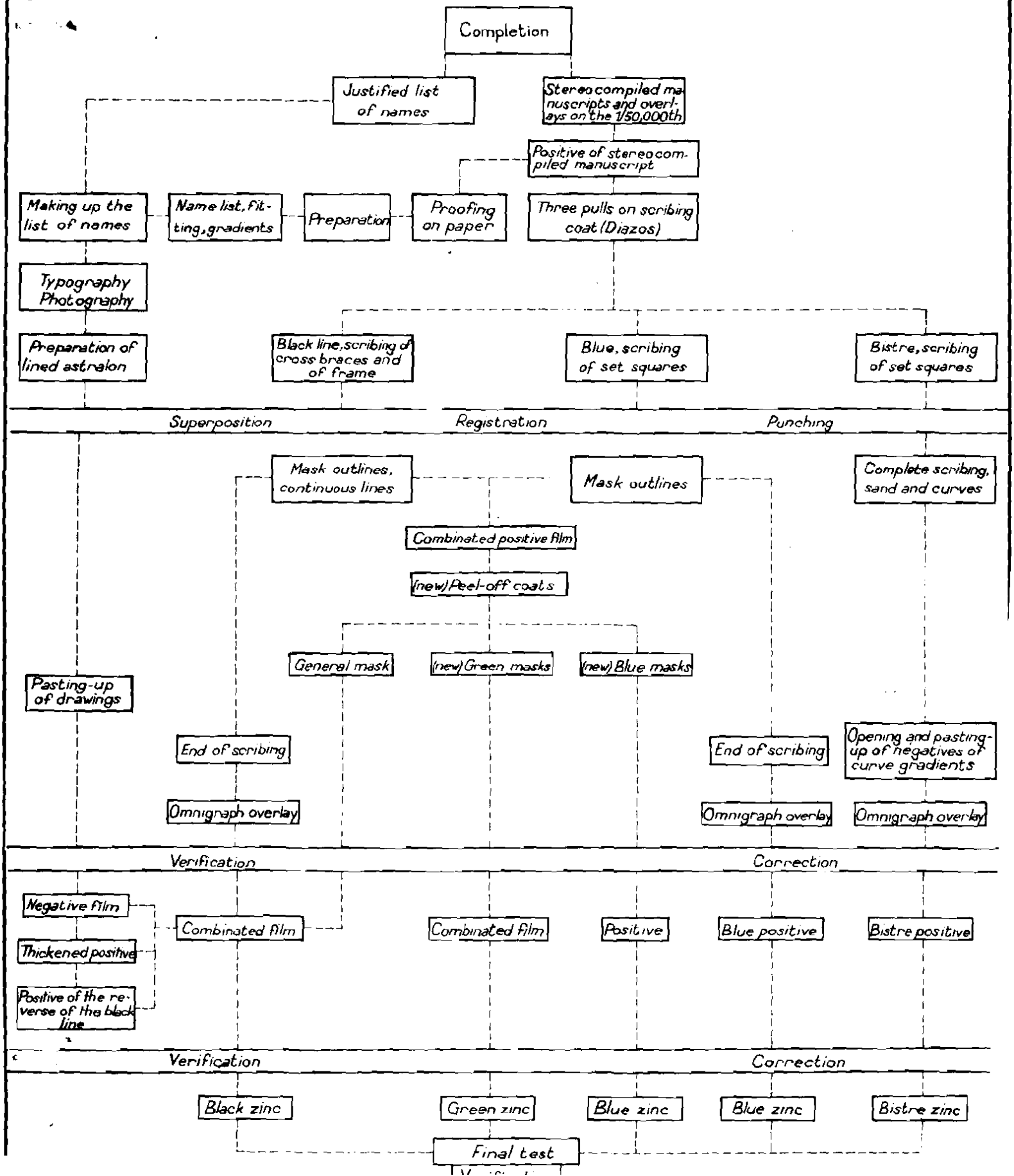
Besides, we are fully convinced that the method used for these first four sheets can be perfected and that later maps will be technically and esthetically superior.

Our continuous and lasting experience, the constant modernization of our equipment and the systematic improvement of our staff, as well as the criticisms and comments of the users, and our contacts with international organizations specializing in this field, will bring an effective contribution to the evolution of cartography in Tunisia.

ANNEXE I

CARTOGRAPHY

Scribing execution plan of the base map of Tunisia on the scale 1/50,000



ANNEX II

COAT SCRIBING

Preparation of maps of Tunisia on the Scale 1/50,000

(Four Sheets of Djerba)

Brown plate

- Master contours : by a ring scriber with knife N° 20
- Fine and intermediate contours: a ring scriber with a knife N° 12
- Contour value : cut out the required space with the gouging knife N° 170 for contour values. Putting into position of the contour values on a negative stripping film and sticks down.
- Sands, by signograph with fine points, N° 8 to 15.

Blue plate

- Banks and bathymetric contours by a knife N° 12 or with a fine point (12)
- Stream at the source : fine point n° 8 - 10 - 12, by light scribing and by slight pressing to scale then by ring scriber with knives N° 15 - 20 - 25
- Conventional sign for detailed features : with a signograph and fine point (N° 10) or thick point N° 15)
- Reservoir : perimeter with thick point (N° 15) dot tint with a fine point (N° 10)
- Watering place, washing house : fine point (N° 10)
- Well, fountain, source, fine point (N° 10)

Black plate

(1) Geodetic points : signograph and thick point (N° 15)

(2) Roads :

- Branch roads (normal traffic) knife C 1 (continuous line with violet pencil)
- By-roads, well-kept metalled roads knife C 2 (with violet pencil)
- Badly- kept metalled roads, tracks useable by cars, knife C 3 continuous line with brown pencil)
- Ordinary track (in its natural state), service track, forest track, mule path (black line), knife N° 15 or screwdriver n° 15

- Footpath, service path, knife N° 15 or screwdriver (black dotted line)
- Alley and private road, park and garden alley, knife C 4 (red pencil line accompanied by the note "alley in red")

(3) Filling and retouching of crossroads, bridges, etc ...

(4) Limits of Vegetation (even inaccurate) with fine point N° 10.

In the process, the black plate is interrupted at this stage, and from this plate and the blue plate establish the peel-off coats.

(5) Finishing : the work is then done by squares and by strips.

- Recutting of roads of low practicability, temporary service roads, forest hedges, cut-lines and paths.
- Representation of built-up areas
- Minarets, churches, with signograph and thick point (N° 15)
- Dotted tint for buildings : fine point (N° 10) and screwdriver N° 15 (thick line)
- Houses : screwdriver(N° 30 and 40)
- Fences : with fine point N° 10
- Walls :screwdriver N° 20
- Monuments : signograph and fine point (N° 10) and thick points (N° 15)
- Gas tanks : signograph and fine point (N° 10)
- Water towers, towers : signograph and thick point (N° 15)
- Vegetation
- Signs : woods, brushwood, orchards, vineyards, tree-hedges, with signograph and fine point (N° 10)

(6) Complementary Work : on the whole of the plate for :

- Administrative limits, point N° 15, screwdriver N° 20 and signograph, or with ring scriber
- Knife N° 20 and recutting for sinuous lines
- Heights and pylons : signograph and thick point (N° 15)
- High voltage lines : fine point (N° 10)

N. B. : the conventional indications in parentheses relate to completion.