

FIRESCOPE TASK FORCE MEETING SUMMARY

The following summarizes the FIRESCOPE Task Force Meeting of January 10, 1978, held at L.A. County Fire Camp II.

In Attendance

Gerry Brown
Terry Haney
Bob Irwin
Glenn Lehman
Bill Linn
George Lund
Dennis McGowan
Arnie Masoner
Keith Metcalfe
Chuck Mills
Boyd Newby
Randy Pollei
Michael Renslow
✓Mike Scherr
Walt Turner

Agency

California Division of Forestry
System Development Corporation
USFS - FIRESCOPE
Santa Barbara County Fire Department
L.A. County Fire Department
Ventura County Fire Department
Santa Barbara County
USFS - FIRESCOPE
California Division of Forestry-FIRESCOPE
USFS - FIRESCOPE
California Division of Forestry
L.A. City Fire Department
USFS - FIRESCOPE
Office of Emergency Services-Fire Division
California Division of Forestry

Mapping of the non-fuels Data Base comprised the main topic of the meeting. The Task Force was updated on the status of the mapping program and discussed a variety of topics related to cartography and the production of the map products. The following list outlines these subjects and comments.

I. FIRESCOPE Core Area

Each member received a quadrangle index map depicting the 42 - 7.5', 1:24000 quads comprising the "Core Area". These quads will serve as a "plot" for the entire FIRESCOPE Area and will receive the base revision, orthophoto base, and operational data layer separations. From the development of this "pilot" a realistic evaluation of the final products may be accomplished and reliable cost data will be available. For these reasons, current emphasis will be directed to complete the Core Area quadrangles.

II. Aerial Photography

- A. 1:80000 7.5' quad-centered, black/white photography was taken in June 1976 for the Core Area Quads.
- B. 1:40000 $\frac{1}{4}$ - 7.5' quad-centered, black/white photography has not been taken due to a lack of proper weather conditions. Completion is expected by summer '78.

The aerial photography is being obtained for the Core Area by means of a co-operative agreement between the USFS and the USGS. The 1:80000 and 1:40000 photography is to be used for the production of 7.5' - 1:24000 orthophoto quadrangles and 1:6000 orthophoto quadrangles of the interface areas, respectively. Samples of these scale photos were examined by the Task Force.

III. Orthophoto Quadrangles (OQ) Maps

A. 1:24000, 7.5' (42 Quads)

Orthophoto Quads were prepared in July 1977 by the USGS-Menlo Park for the 42 quad Core Area. Using the 1:80000 photography, these OQ's did not meet National Map Accuracy Standards due to image displacement problems, and are currently being re-made by the USGS-Reston. These advance OQ's are being used only for map data compilation by the Angeles and Los Padres NFs. Any cartographic methods requiring accurate locations will incorporate the final OQ.

The Task Force reviewed a sample 1:24000, 7.5' orthophoto quad.

B. 1:6000, 1.875' x 3.75' (142 Interface Quads)

Orthophoto Quads will be prepared by the USGS for the designated interface area quadrangles which measure 1.875' x 3.75' (See Figure 1). The 1:40000 photography being secured by the USGS will be used to produce these OQ's.

The "Burbank" sample 1:6000 OQ was examined by the Task Force, and several members took diazo paper prints with them.

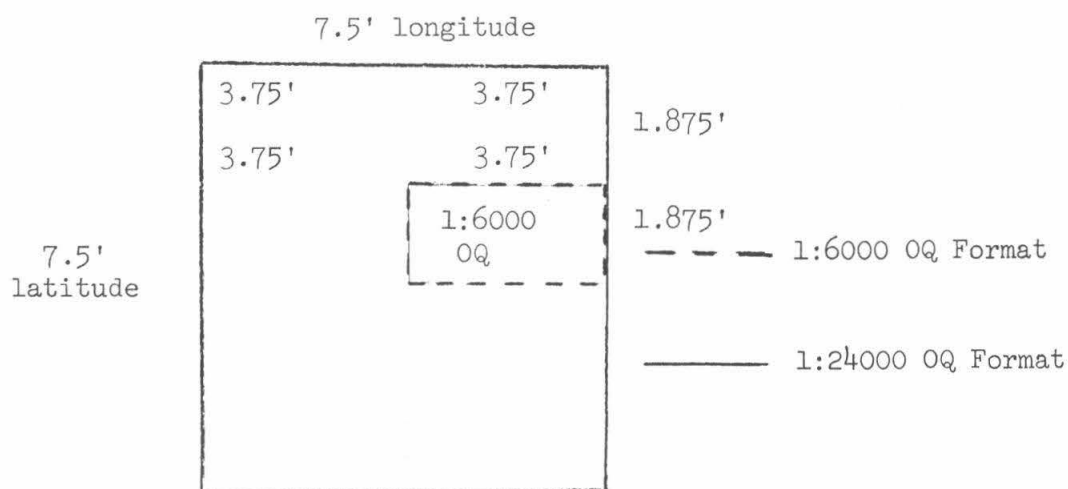


Figure 1

IV. BASE MAP REVISION (1:24000 Quadrangles) (Revision of 42 Core Area Quads)

- A. **Compilation:** Compilation is currently in progress on 34 of the 42 Quads which occur on the Los Padres and Angeles NFs. The advance OQ's are being used for the compilation guide. Each Forest has done some work on these quadrangles, but their progress to date has not been evaluated. This information will be available by the next meeting.

The 8 Quads not in compilation progress may possibly be included with the other 34 with a minimum of a standard photo revision. Field verification for these quads at this time may not be critical, as historically, "plotting everything" has satisfied a large proportion of map users' needs.

Figure 2 (attached index map) illustrates individual National Forest compilation responsibilities; wildland, interface, urban designations; and quadrangle locations.

- B. **Drafting:** The services for drafting the revisions may be obtained through the USFS Geometronics Service Center, the USGS Western Mapping Center or by contract. These agencies will be contacted, and by the next meeting a source for the drafting will be identified.

A sample of data layer separation mapping (Canoga Park Quad) was presented to the Task Force which illustrated the various layers which compose the final printed map. The advantages of this cartographic system were explained with emphasis on flexibility, accuracy, and maintenance.

V. ORTHOPHOTO QUAD - "CARTOGRAPHIC ENHANCEMENT"

- A. **1:24000, 7.5' Quad Maps**

The standard quadrangle data layers will be composited with the matching orthophoto to produce various standard non-fuels data base maps. Additional operational data layers developed by partner agency need and compilation will be composited to the standard base providing functional FIREScope maps. A listing of the standard and additional layers follows:

These 7.5' quadrangle maps will be prepared for the entire 42 Quad Core Area.

Also, the plotting accuracy of these quadrangle maps will fulfill National Accuracy Standards (NMAS).

B. 1:6000 Quad Maps

As previously described, these quads provide large scale coverage for the interface areas. The standard quadrangle data layers will be enlarged 4 times (400%) and formatted to enhance the orthophotos. The enlargement of the standard accuracy layers results in map data which does not meet NMAS, but an analysis of this circumstance indicates that fulfillment of NMAS is not critical to the usability of the 1:6000 orthophoto quad map.

Additional operational data layers will also be developed complementary to the scale.

Symbology for operational data layers has been developed and will be appropriately applied. The importance of a "standard" base throughout the entire FIREScope area was emphasized throughout the meeting. The operational maps may vary in content and be customized to fulfill individual partner agency needs.

C. SEPARATION DATA LAYERS

1. Standard 7.5' Quadrangle Layers

- a. Culture (roads, trails, boundaries, buildings, utility lines)
- b. Land Lines (township and section lines, township lettering)
- c. Drainage Detail (perennial and intermittent streams, lake outlines)
- d. Open Water Fill (lakes, large rivers)
- e. Lettering (geographic names, administrative names)
- f. Contour Lines (includes spot elevations)
- g. Vegetation Cover Fill (Standard USGS symbols)

(Note: Layers a. thru g. are typical of the standard USGS mapping program. Layers h. thru j. are typical functional data separations prepared by secondary mapping agencies such as USFS.)

- h. Land Status Fill (private, various public, State, etc.)
- i. Boundary Fill (USFS, Wilderness, State, County, etc.)
- j. Boss Contours (produced from Layer 'f'.)
- k. Orthophoto Quadrangle (produced by several agencies)

2. Proposed FIREScope Operational Layers

- a. Water Systems (hydrants, etc.)
- b. Pre-Attack (ICP, heliports, camps, miscellaneous facilities)
- c. Utilities (gas and electrical lines, storm drains)

- d. Vegetative Types and Classification
- e. Communications Considerations
- f. Firebreaks
- g. Fuelbreaks
- h. Limitations (for example, poor roads, low underpasses, etc.)
- i. Pay and Mutual Aid Boundaries
- j. Block Numbering (for city divisions)

The development and practical application of these data layers will be a continuing project for the Task Force. Undoubtly, more layers will be identified as necessary, resulting in the above list being consolidated and modified.

Note: I am scheduled to visit with each of the partner agencies during the coming month to review their mapping program. From these visits an analysis of how on-going programs and compilation may interface with the FIRESCOPE program will be possible. (MSR)

VI. DIGITAL DATA BASE

A. Progress

1. 1:24000 Scale Digital Terrain Data - Since the meeting, I have learned that the USGS-Reston, as part of re-scanning the Core Area orthoquads, is automatically digitizing all 42 quads. Also, I am scheduled to be in Washington D.C. the week of February 26 at which time I hope to review the the USGS process and quality of the digital data. (MSR)
2. Planimetric Feature Digital Data
To complement the Digital Terrain Data at both scales, planimetric map data (roads, trails, boundaries, designated buildings, sites, etc.) will have to be digitized at a yet-to-be-determined accuracy level to interact with the Firemodeling programs.

One alternative deserving consideration is that the USGS 1:100000 mapping program is designed for and is scheduled to be digitized. The amount and accuracy of planimetric map data at this scale could possibly be acceptable for the modeling. This program and other sources need to be analyzed. Also, a system for digitizing the operational layer data applicable to the modeling program must be investigated.

B. Applications

1. Firemodeling Program.

An evaluation is needed to determine what level (i.e., how many) digits will be necessary to provide the required level of modeling. In the coming months as digits become available, an evaluation of this digit/modeling ratio will be possible.

2. Inter-Agency Map Programs.

The digits collected for the FIREScope program will be part of or incorporated into several on-going mapping programs, for example, the USGS, USFS, and State of California. Several other disciplines, such as Engineering, Landscape Architecture and Land Use Planning, will also utilize the digital data. The FIREScope program will provide a data base in-keeping with the state of the art and fully applicable to automated mapping routines.

C. Digital Data Test Area.

1. 1:24000 Scale - As a result of the USGS digitizing (VI-A-1), the entire 42 Quad Core Area will be available to serve for the test. Erwin and Renslow will select an area.
2. Planimetric Feature Data - Pending the review of systems available, a test area corresponding with the 1:24000 scale test area will be selected.
3. Computer Program Evaluation - This test will provide important data regarding the usability of existing computer routines, formatting problems, and cost variables.

VIII. Miscellaneous Topics

A. Scale of Map Products.

Some discussion occurred concerning the final scale of the FIREScope Map products, specifically, metric (1:25000) or non-metric (1:24000). The employment of current data layers favors 1:24000, as the 1:25000 scale series is being designed with a new set of drafting standards. However, the National Mapping Program is directed towards a metric product, and FIREScope map products should reflect the current graphic standard for mapping. Another consideration is the application of the metric system to the firemodeling routines, which must be evaluated.

I will review this subject with various agencies, in particular the USGS, and report at our next meeting. (MSR)

B. Geocoding.

Three common systems, geographic coordinates, state plane coordinates, and the UTM grid, will be incorporated on the FIREScope Map products. All three systems were reviewed with a explanative discussion of the UTM.

If any member would like a description of the UTM grid, I have a prepared outline. Please contact me. (MSR)

C. Task Force of USGS-Menlo Park.

A meeting in May will be scheduled for the Task Force to receive a tour of the USGS Western Map Center-Menlo Park. The production of orthophoto quads and automated cartography will be emphasized.

D. Progress/Schedule Chart.

Michael Renslow will prepare a updated progress schedule for preparation and costs of the non-fuels data base which will extend over the next 3-4 years. Also, a short-term schedule of events for the next six weeks is attached.

E. Map Samples.

Samples of Orthophoto Quad Maps will be prepared for review and discussion at the next Task Force meeting. These samples will give the members an opportunity to comment on the type of graphics they require.

Also, 1:100000 map samples will be presented at the next meeting.

My objective in preparing these comments and attachments has been to summarize the current status of the FIREScope non-fuels data base mapping program. Hopefully, upon these comments, we can now begin the final preparation of a map system which will effectively integrate into each of our FIREScope programs needs. Any comments you may have will be appreciated.

Michael S. Renslow

MICHAEL S. RENSLOW

Cartographer

Geometronics Section

FIREScope Meeting Minutes
Page Two
January 10, 1978

D. Group present identified possible overlay needs

- a. Water systems
- b. Pre-attack
- c. Underground utilities (transmission lines, drainage)
- d. Vegetation classification (type, age, class)
- e. Street names and block numbers
- f. Land status (responsibility, mutual aid, etc.)

Mike Renslow will develop a summary of his presentation and send to Task Force for inclusion into minutes.

III. Plan to have another mapping presentation in Menlo Park at National Cartographic Information Center (NCIC).

IV. Mike Renslow will meet with each agency's mapping section to get a feel for their needs.

MINUTES

FIRESCOPE TASK FORCE MEETING

L. A. County Fire Suppression Camp 2

January 11, 1978

Attendance: C. Mills, USFS; A. Masoner, USFS; B. Ferris, SDC; N. Moelter, SDC; G. Lund, Ventura County; H. McElwee, S.B. County; T. Haney, SDC; B. Newby, CDF; K. Metcalfe, CDF

- I. Congratulations to Herb McElwee on his promotion to Assistant Chief
- II. Herb McElwee gave an overview of the 9,000 acre Vandenberg Fire that took four lives. Discussion followed relating to how FIRESCOPE may have improved fire operations.
- III. Established schedule for Task Force meetings through March 1978 (see attachment).
- IV. Task Force reviewed Document Control System (DCS)
 - A. Recognized problem of limited document funding identified in OCC budget
 - B. Effective May 1, 1978, document control will be relocated from SDC to OCC facility. SDC will provide training for responsible OCC personnel.
 - C. The ICS Evaluation System and Command Team Exercise needs to be included in DCS
 - D. Concern was expressed of existing numbering system. It does not assist those unfamiliar with system to learn it in a logical sequence. SDC will prepare some alternatives for Task Force review.
 - E. Agreed that documents not available for distribution should not be identified in DCS.
 - F. Need to identify procedure for obtaining documents. OES seems to be the logical control within the state. Task Force will readdress this procedure January 19 after further research.
- V. Review of ICS air operations organization (J. Lewis and J. England in attendance)
 - A. All agencies, except L.A. City, agreed to relocate Air Support Unit in Logistics Section to Suppression and Rescue Section and reidentify it as "Helicopter Support."
 - B. Each agency will review positional description manuals for air operations and be prepared to make recommendations.

Minutes submitted by George Lund, Task Force Chairman