Irrigation Systems and Nutrient Management

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Presentation will be available at: http://ucanr.org/schwankl

Irrigation Systems

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  - Source of water which can leach nutrients from the root zone.
    - Rainfall

Irrigation Systems

- Types of irrigation systems:
  - Surface irrigation – furrow and border strip

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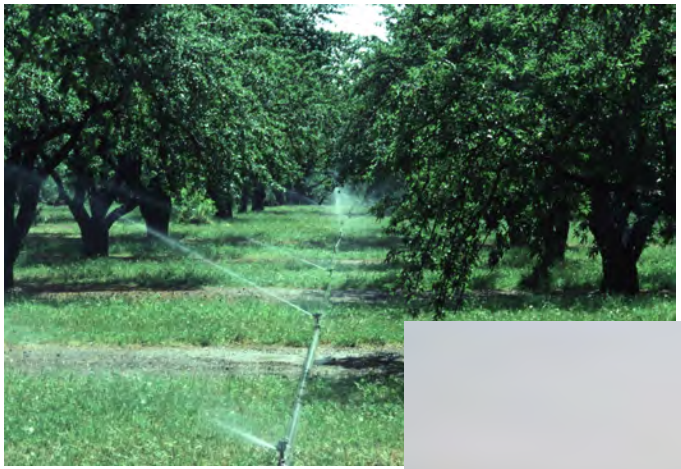
  - Surface irrigation – furrow and border strip.
  - Sprinkler irrigation

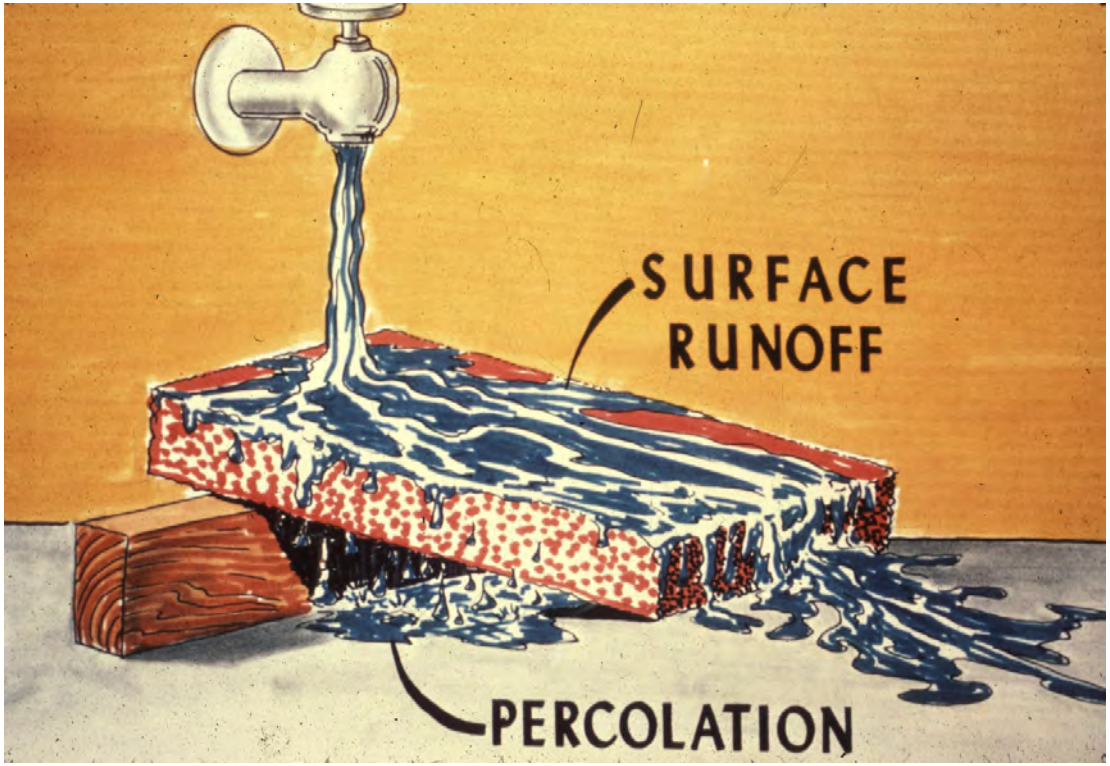


Irrigation Systems

- Types of irrigation systems:
  - Surface irrigation – furrow and border strip.
  - Sprinkler irrigation
  - Microirrigation

Irrigation Efficiency

- Measure of how much of the applied water goes to "beneficial uses".
  - The major beneficial use is to supply plant water needs (ET)



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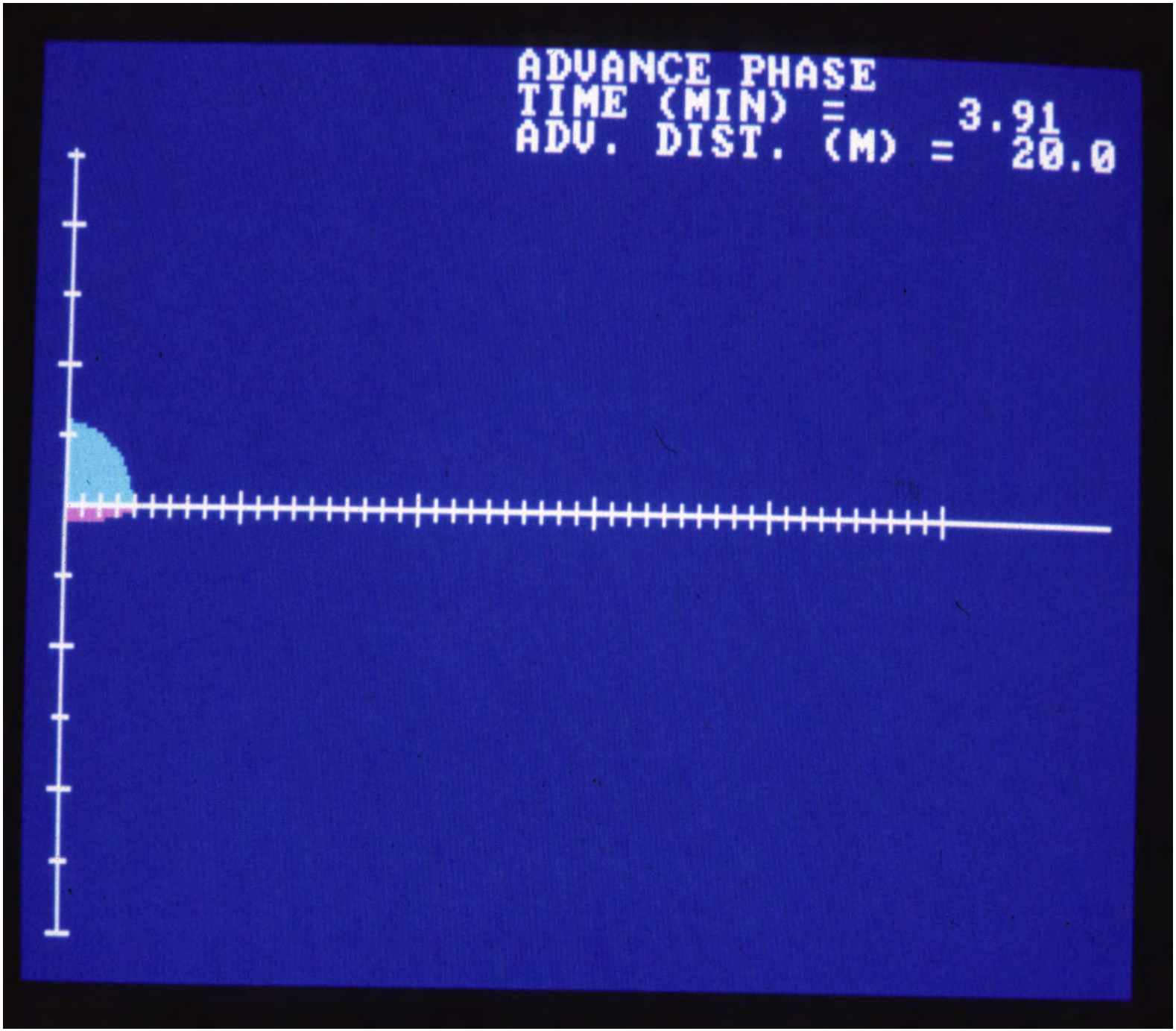
- Losses can be from deep percolation and tailwater runoff.
  - Minimize runoff losses by Tailwater Return Systems.
  - Deep percolation losses are a challenge for surface irrigation systems.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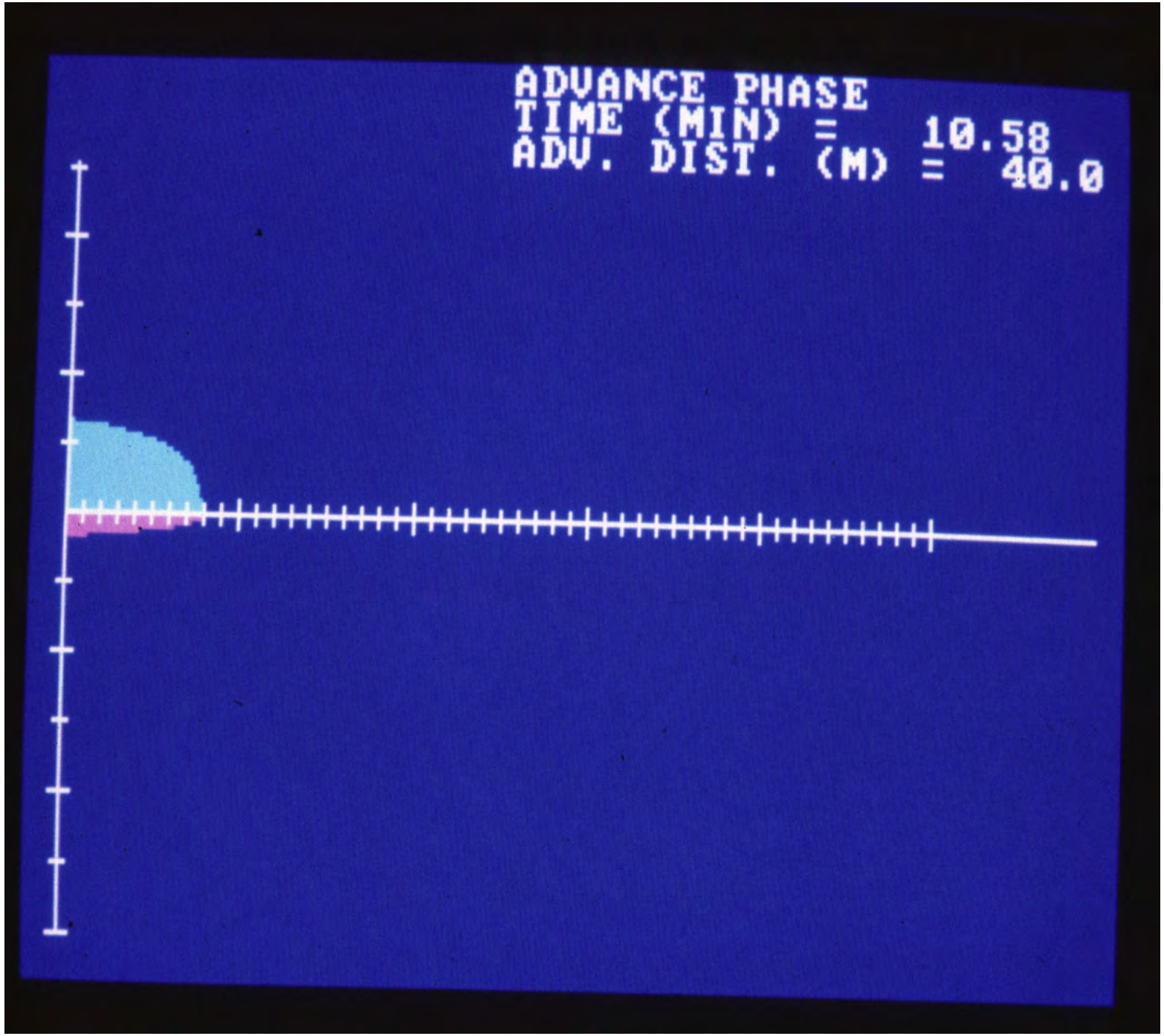
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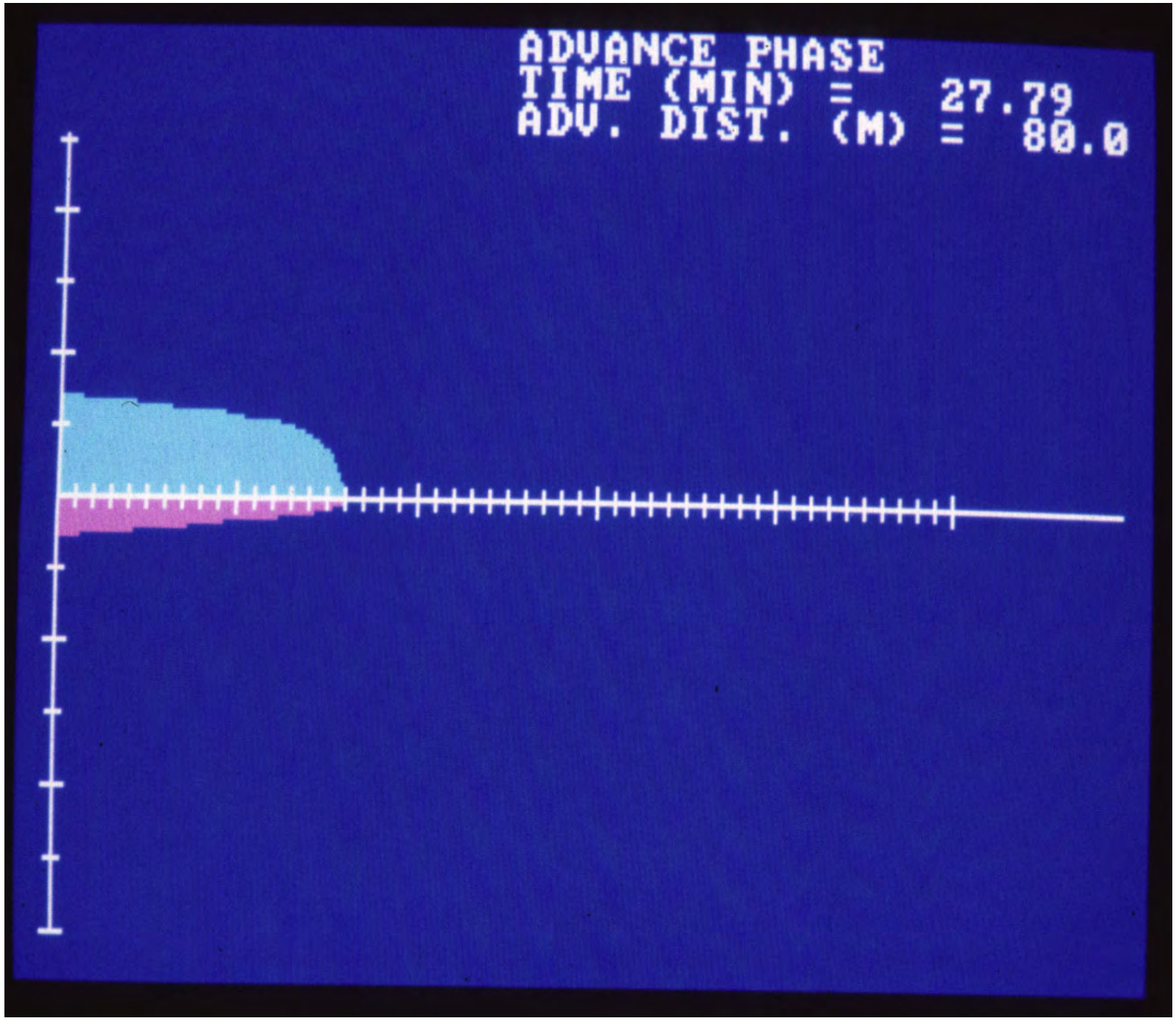
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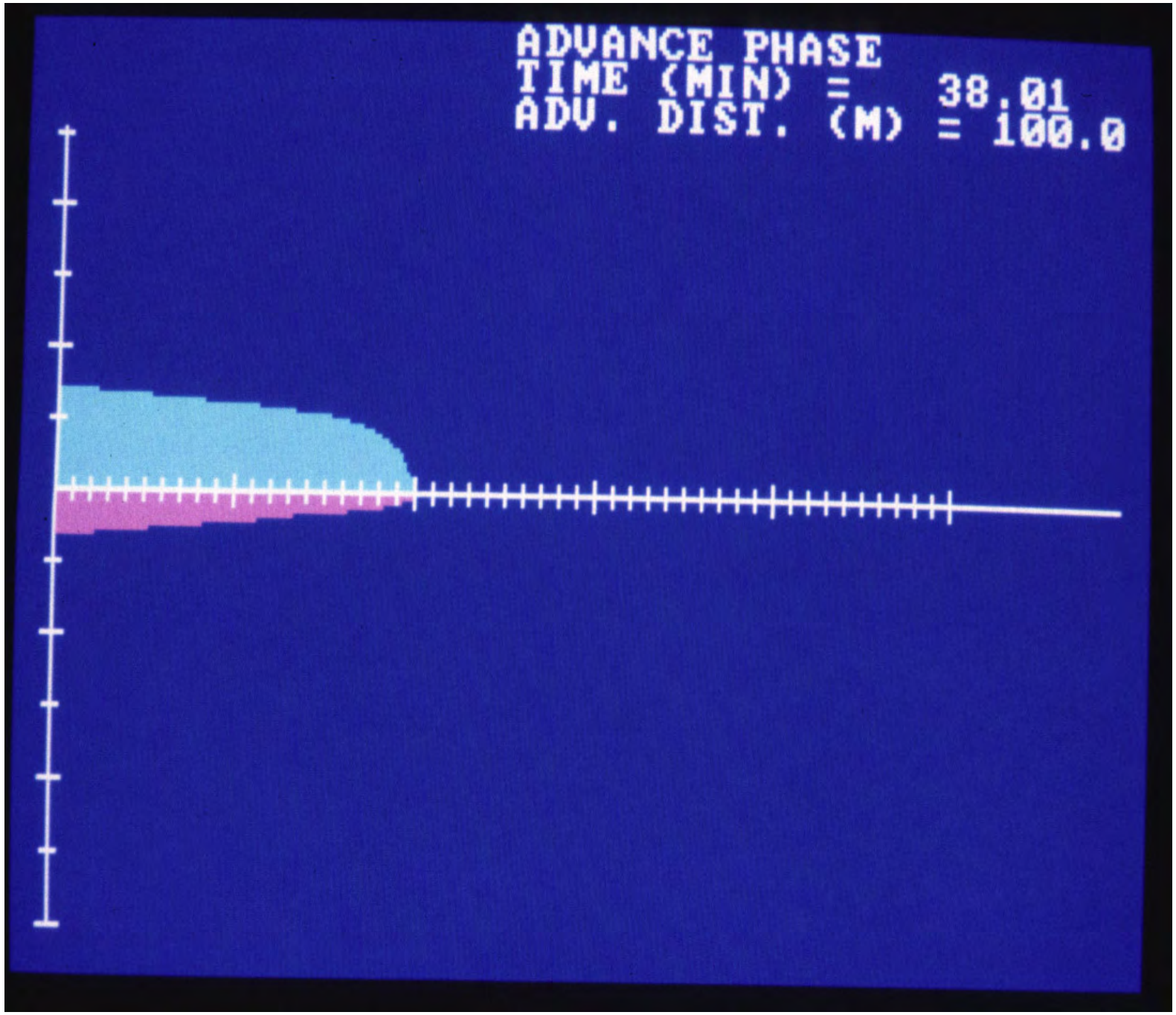
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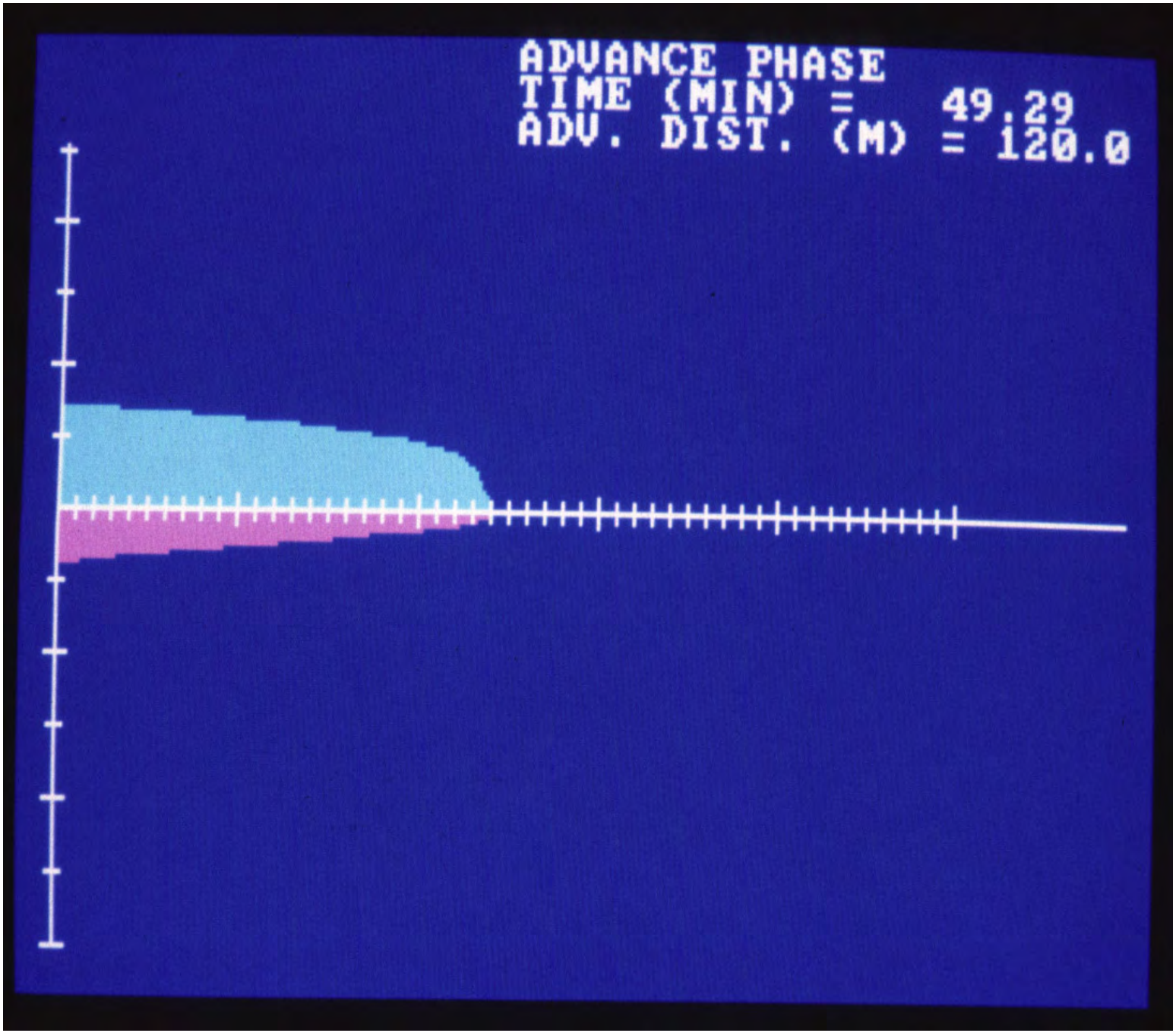
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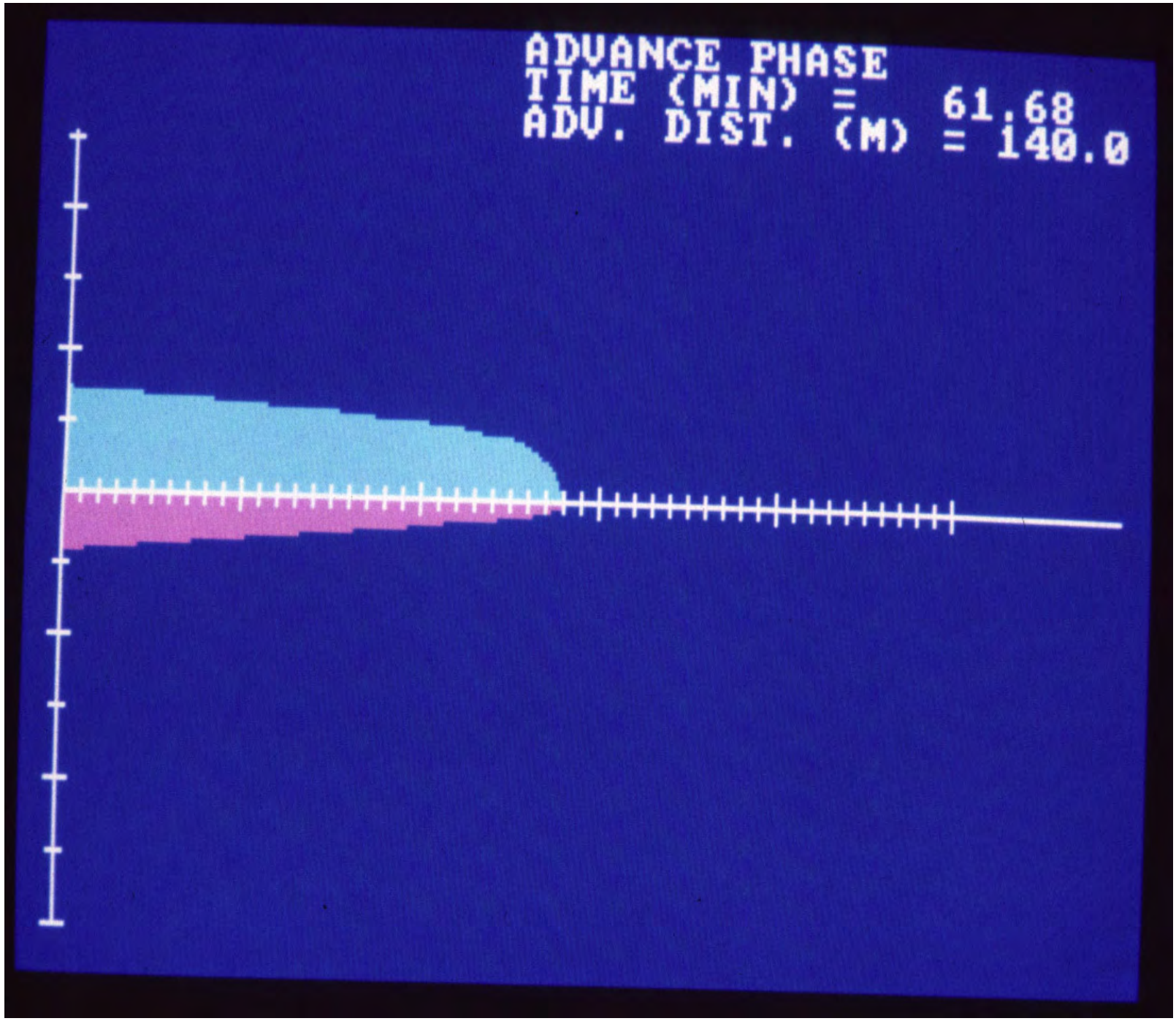
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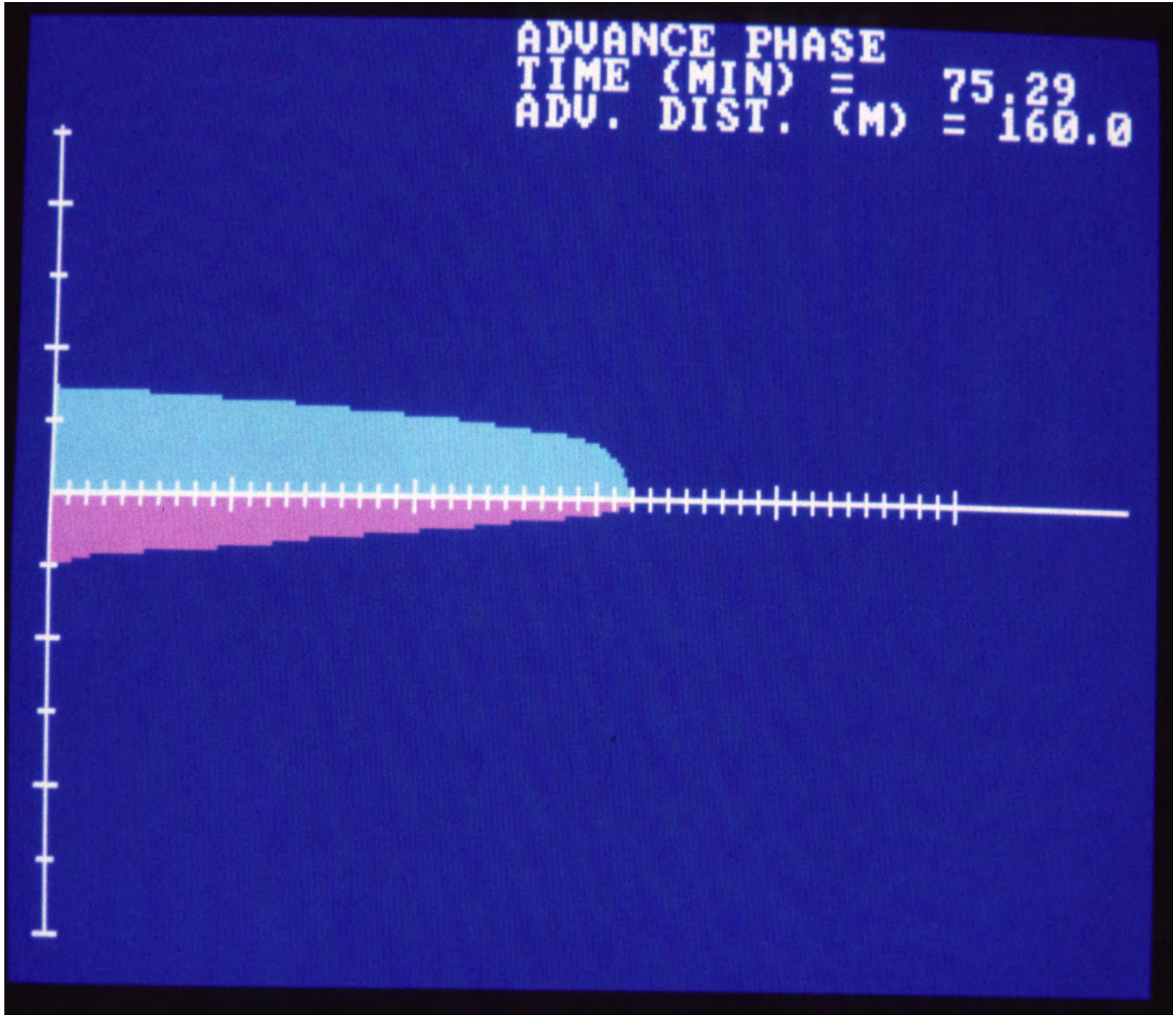
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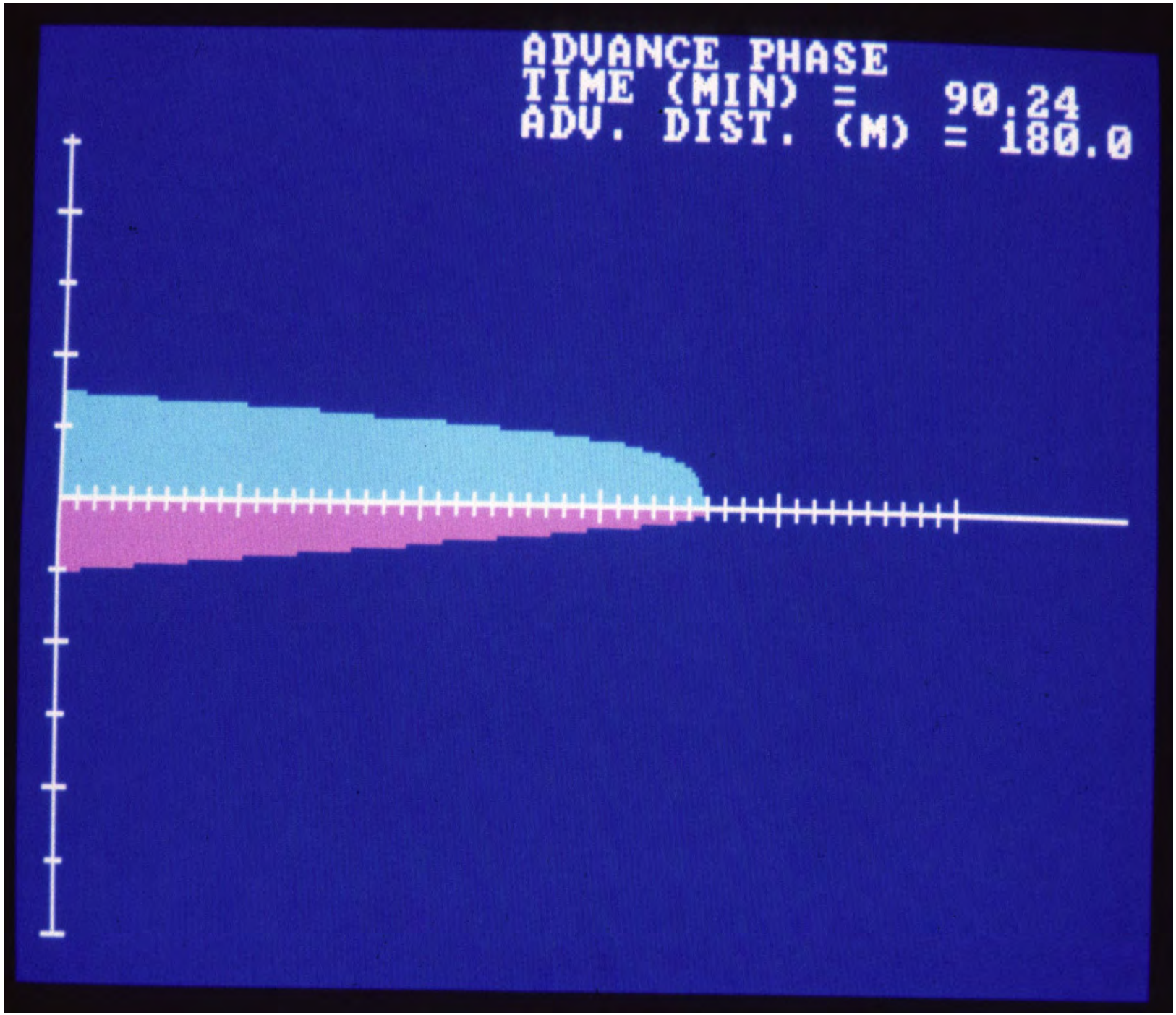
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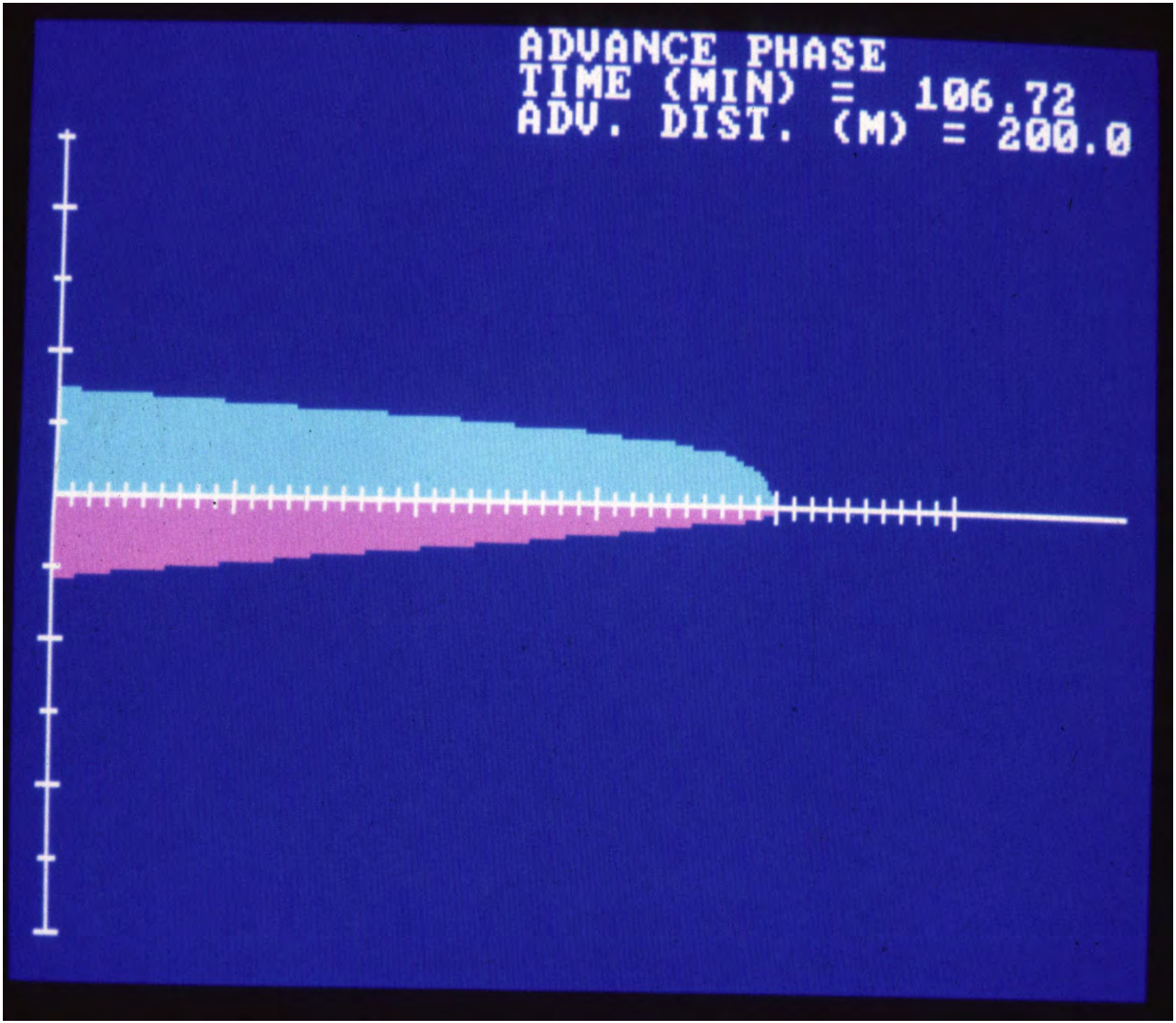
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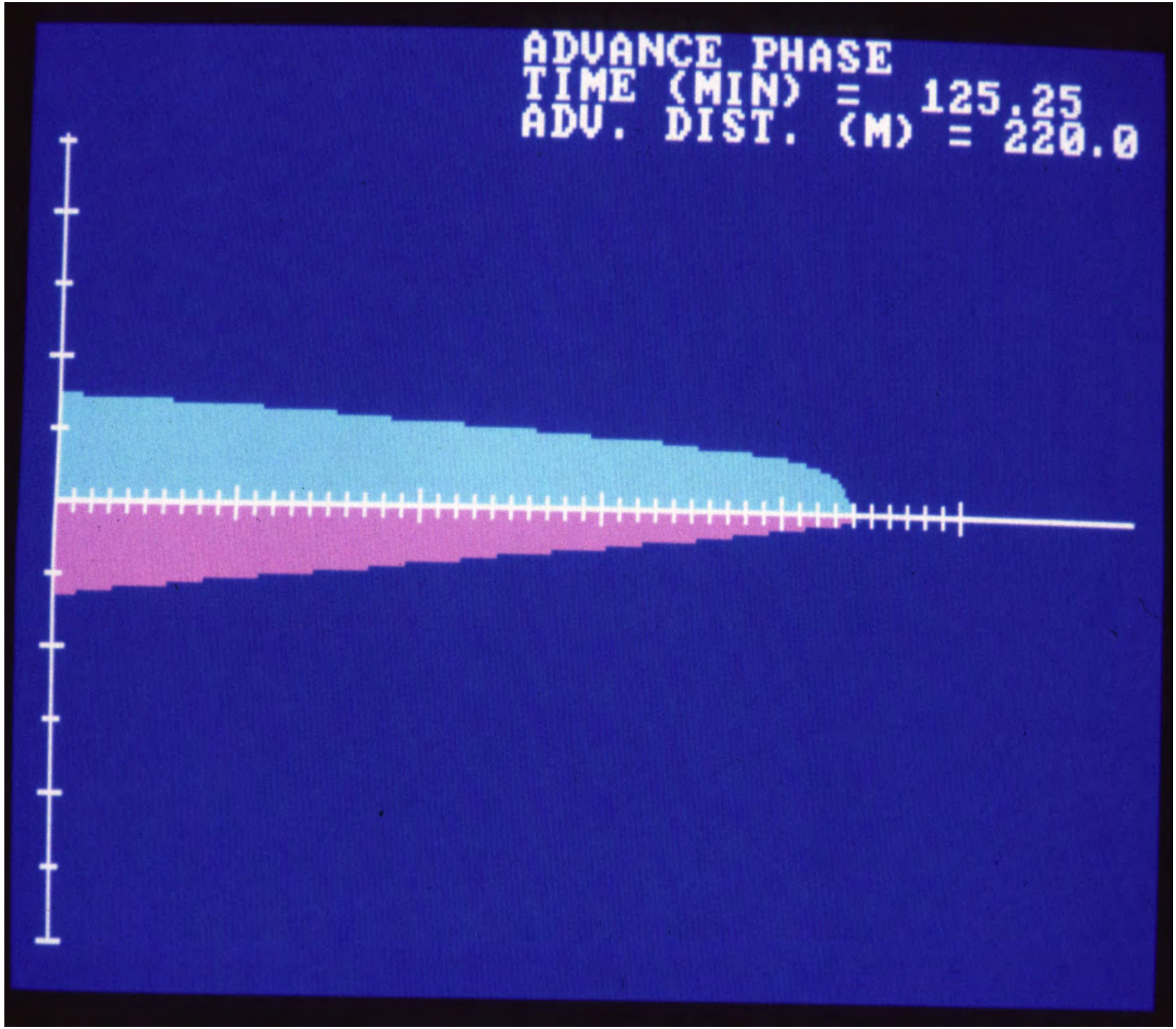
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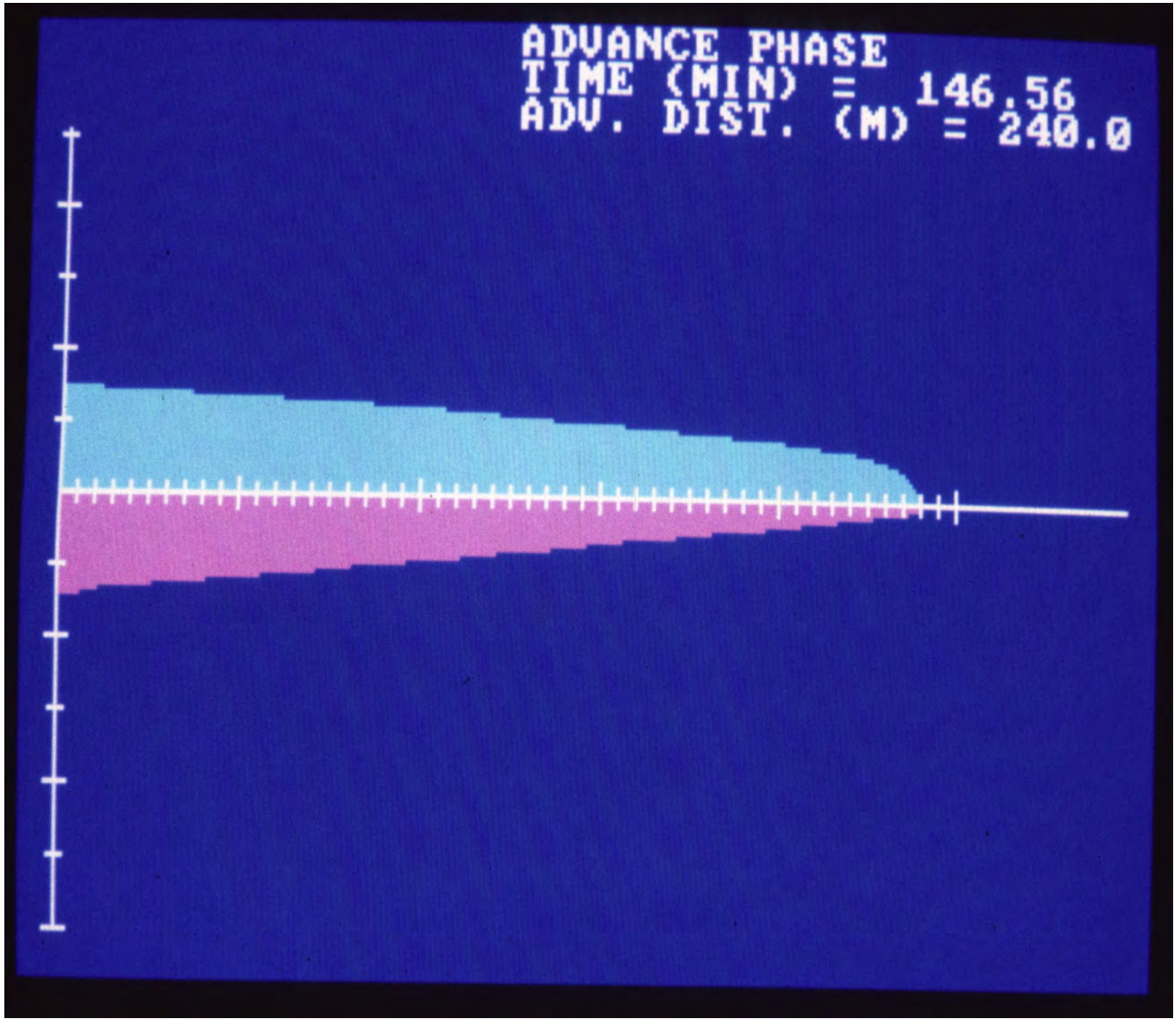
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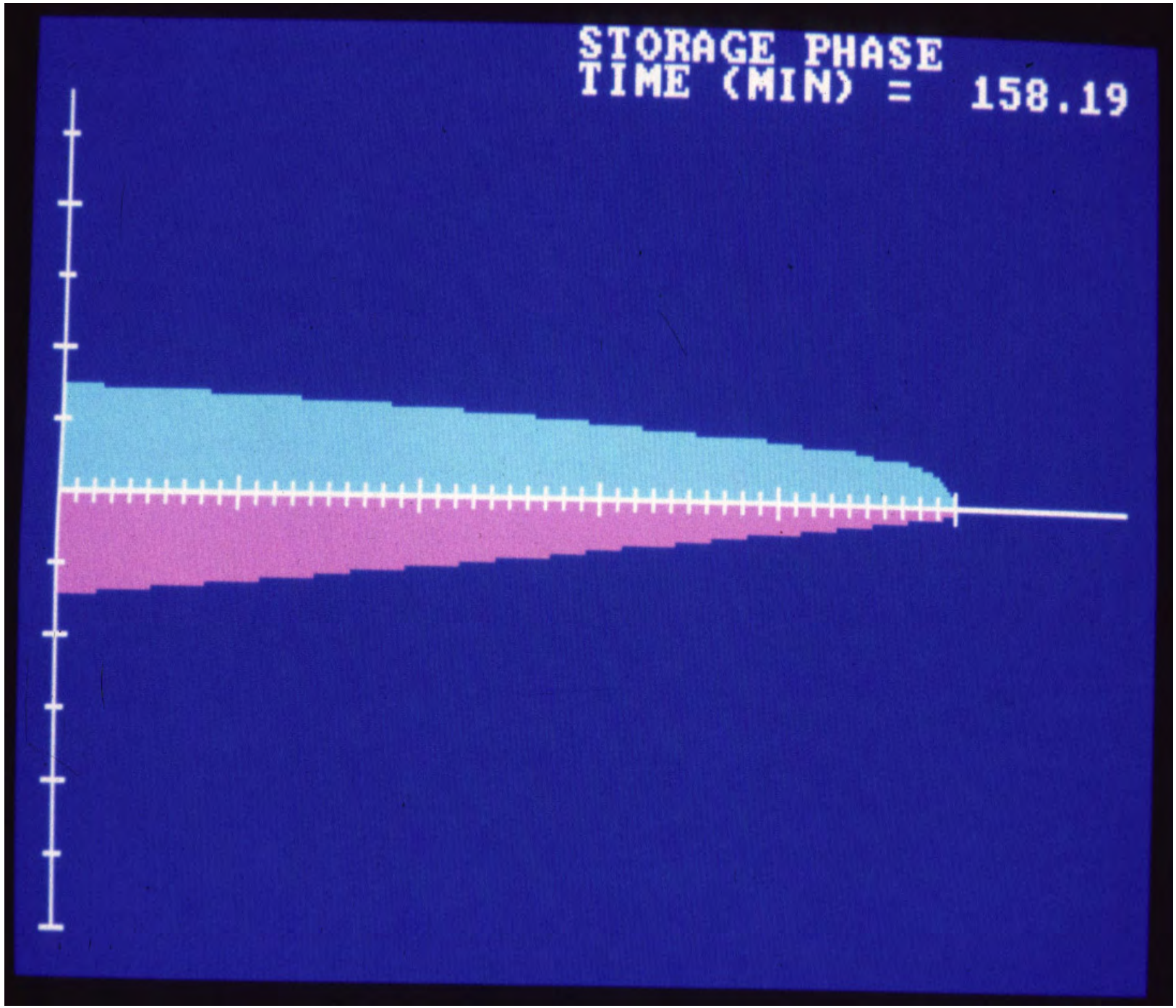
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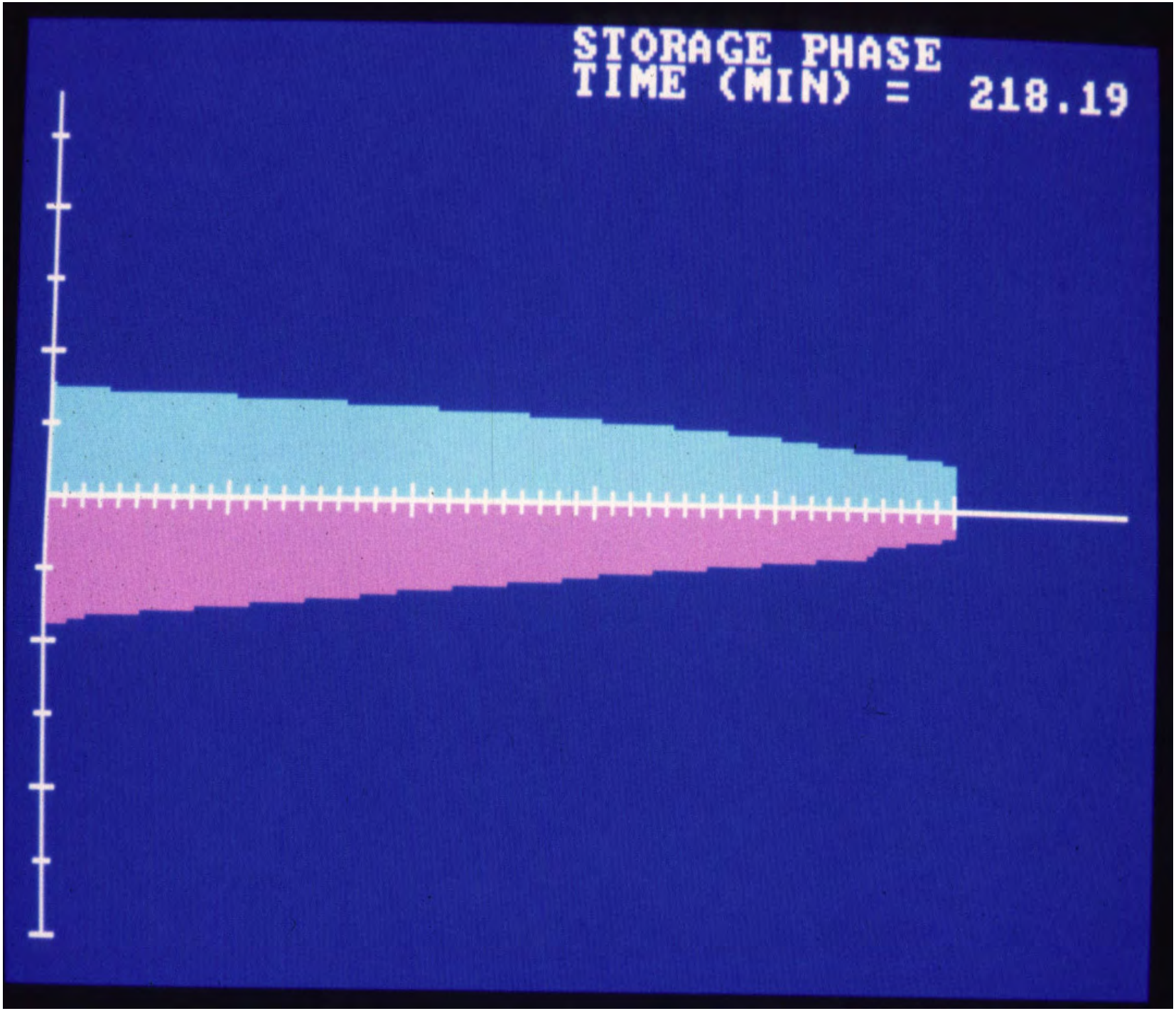
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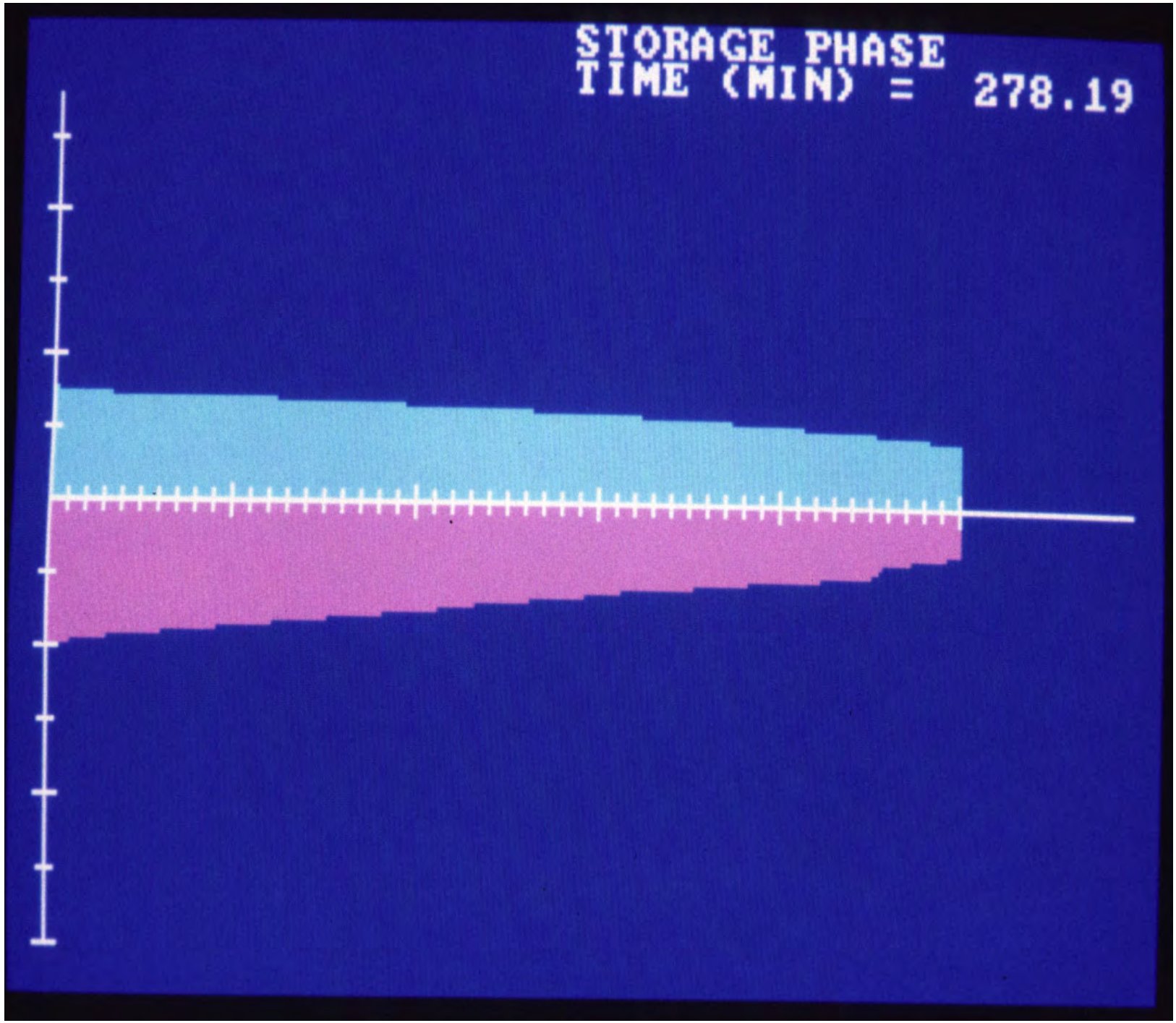
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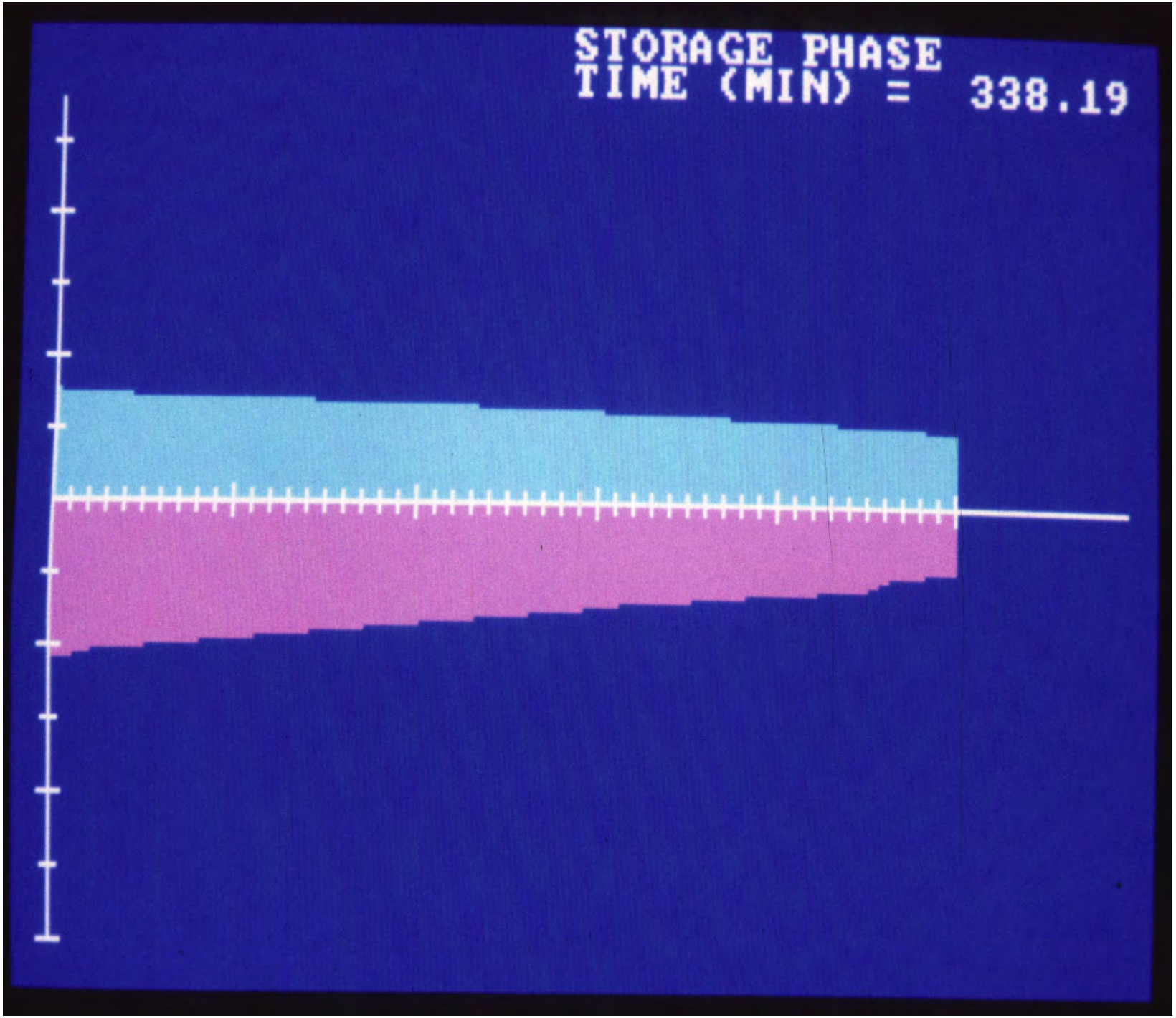
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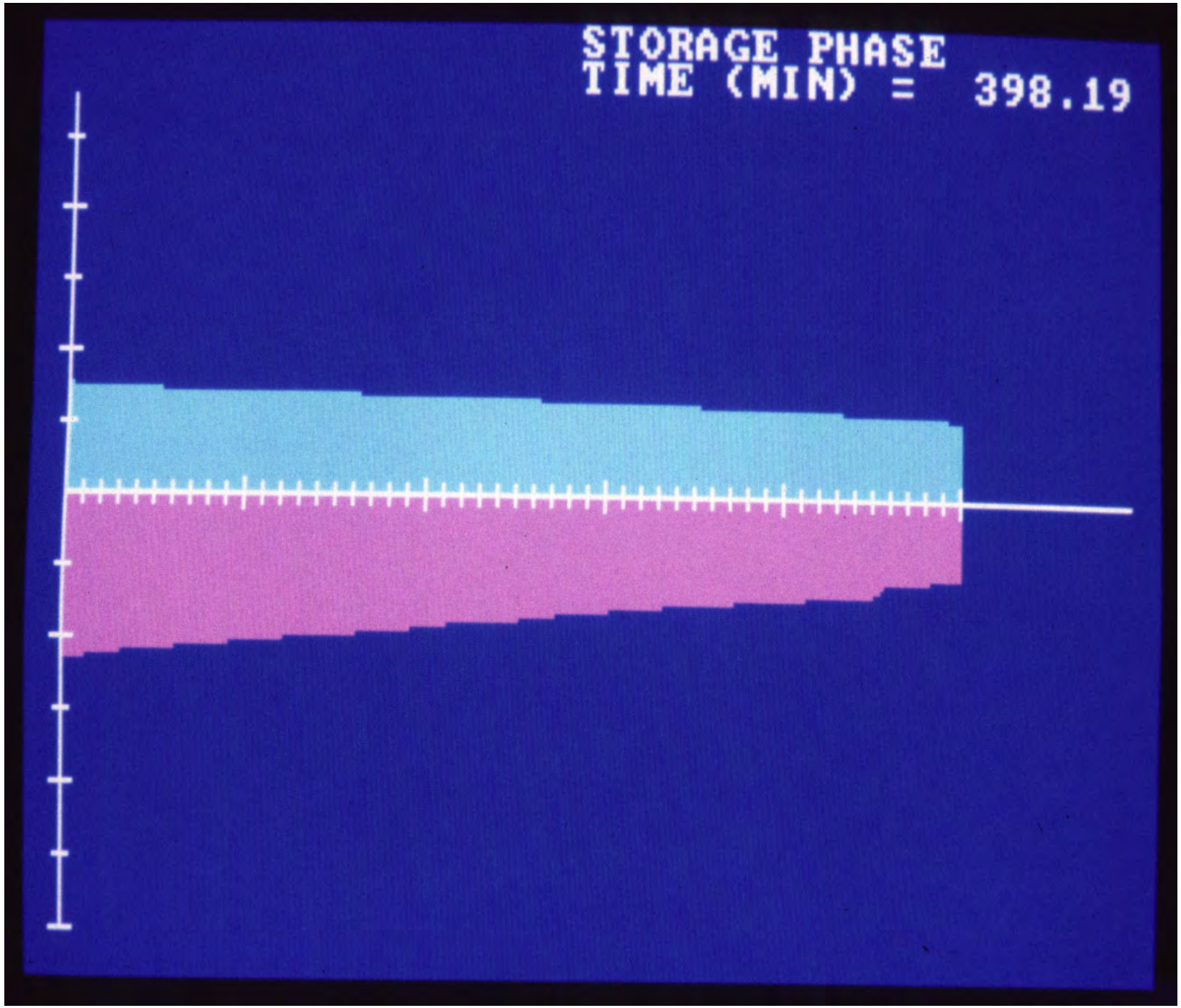
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Surface Irrigation

- Losses can be from deep percolation and tailwater runoff.
  - Minimize runoff losses by Tailwater Return Systems.
  - Deep percolation losses can be reduced by;
    - Irrigating the right amount at the right time (irrigation scheduling)

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  - Minimize runoff losses by Tailwater Return Systems.
  - Deep percolation losses can be reduced by;
    - Irrigating the right amount at the right time (irrigation scheduling)
    - Having a well designed system (right length field, right flow rate, etc.)

Surface Irrigation

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- Good management needed when added nutrients to irrigation water.

Sprinkler Irrigation

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- Deep percolation losses can be minimized by good irrigation scheduling. Hardware gives better control.

Microirrigation Irrigation

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- Deep percolation losses can be minimized with good irrigation scheduling. Again, hardware provides better control.

Irrigation - Summary

- If there is deep percolation associated with the irrigation, it can transport nutrients below the root zone.

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- If there is deep percolation associated with the irrigation, it can transport nutrients to below the root zone.
- With fertigation, nutrients are applied with the irrigation water. Special care needs to be taken to make sure the nutrients stay in the root zone.

Questions?

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