Final Report

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Container Prediction Program
Users Guide

by

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Container Prediction Program

***Users* Guide**

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Lawrence E. Spurgeon

Research Sponsored by

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TransNow
USDOT Region 10 University Transportation C'enter
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Seattle, WA

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CONTAINER PREDICTION PROGRAM

The container prediction program is a prototype data base application that assists intermodal railroad terminal managers in forecasting daily container volumes for ship to rail transfers. The program runs under Foxpro 2.5 for Windows. It is designed specifically for common user terminals where containers arriving from several steamship lines are intermingled and placed on trains for several destinations. The program will facilitate necessary forecasting for Double Stack Planner, a decision support system for loading containers onto double stack rail cars (Pacanovsky 1994, Rolle 1994, Spurgeon 1994). The container arrival predictions will assist in

- personnel and equipment planning at the terminals,
- ordering rail cars,
- planning the number of train movements for each destination,
- and motive power planning.

Required information for predictions include

- vessel arrival date,
- first day spit percent (the proportion of containers that will be unloaded in the first day if the vessel is discharging more than one day),
- number of containers by size and destination,
- destinations served by each train.

Summations are made for each destination and each train for each day. If a vessel discharge is split between two days, the percentage of containers of each size and each destination on the first day is equal to the first day split percentage. The following reports are available:

- Tick sheets that provide a daily container forecast by size and destination
- Weekly projections in forty foot equivalent units by day and by train.

Often vessel schedules change due to weather, lack of dock space and conflicting traffic. If manual methods are used for forecasting, such changes require considerable calculation effort. However, the container prediction program can revise the forecast if the vessel arrival date and split percentage is updated.

The program is used as follows:

1. From the *New Arrivals* screen, for each vessel enter
   - name of vessel,
   - name of steamship line,
   - start date (start of discharge),
   - first day split percent,
   - and number of 20 and 40 ft containers by destination.

2. From the *Dests* screen, associate train numbers with destinations.

3. From the Reports menu,
   - Generate Tick Sheets
   - Generate Weekly Projection

A walkthrough of the Container prediction program is provided in Appendix A and further technical documentation is provided in Appendix B.

REFERENCES

Pacanovsky, D. L., (1994) ***A Decision Support System for Loading Containers onto Double-Stack Rail Cars.*** Report to TransNow US DOT University Transportation Center, Seattle, WA.

Rolle, S.S., (1994). ***A Computerized Assignment Algorithm for Loading Intermodal Containers to Double Stack Rail Cars.*** Report to TransNow US DOT University Transportation Center, Seattle, WA.

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CON_FOR.DOC

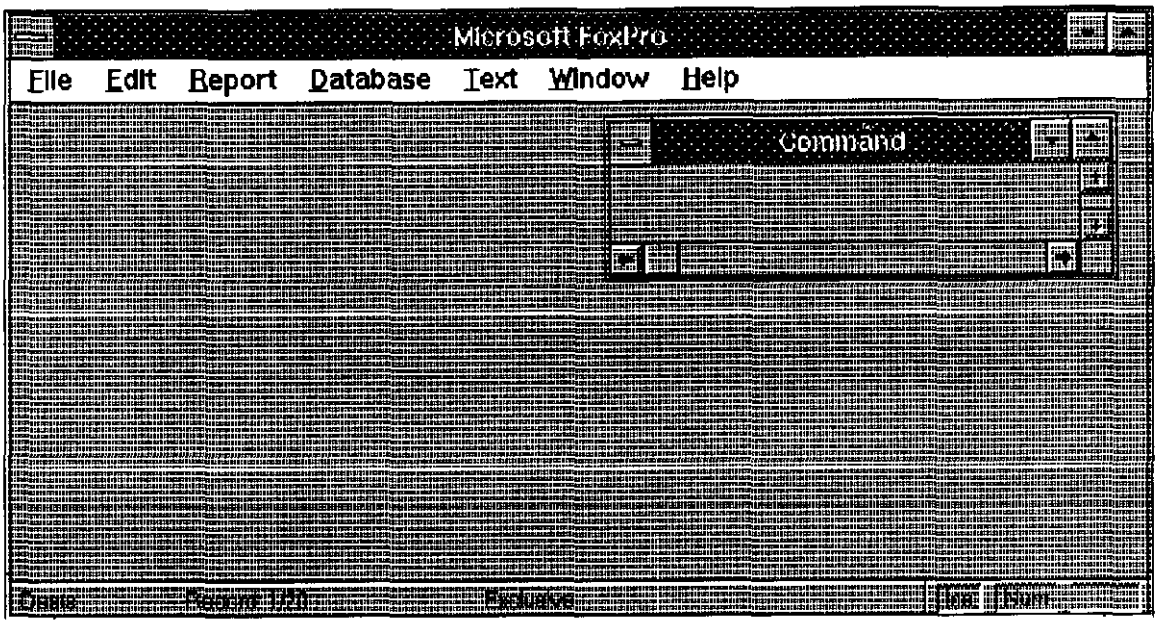
APPENDIX A

A Walkthrough of the Container Prediction Program

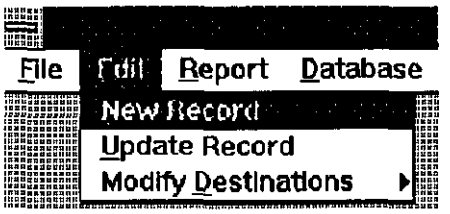
A Walkthrough of the Container Prediction Program

Click Twice on this icon

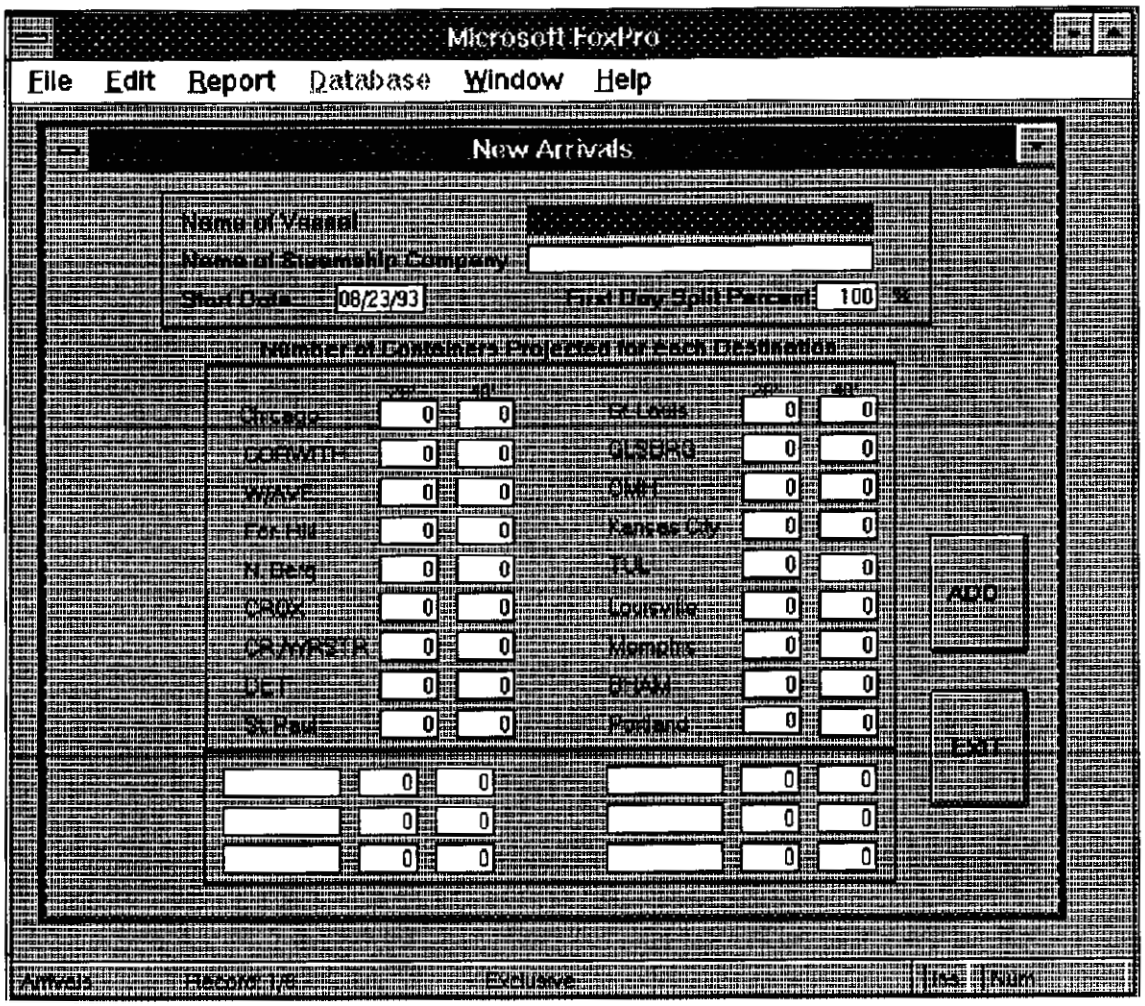
and this window will open



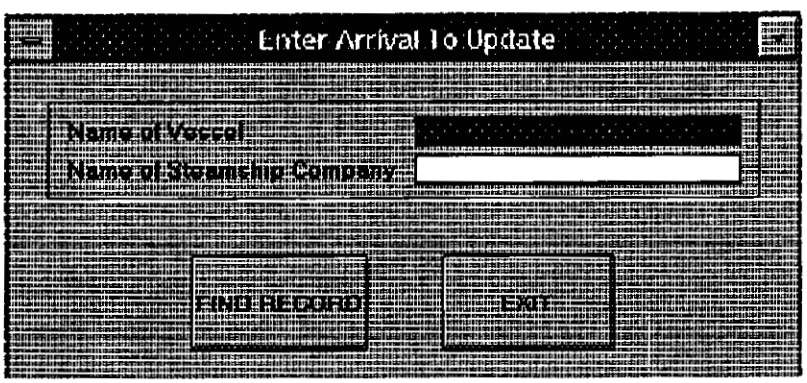
Select Edit and these alternatives will become available



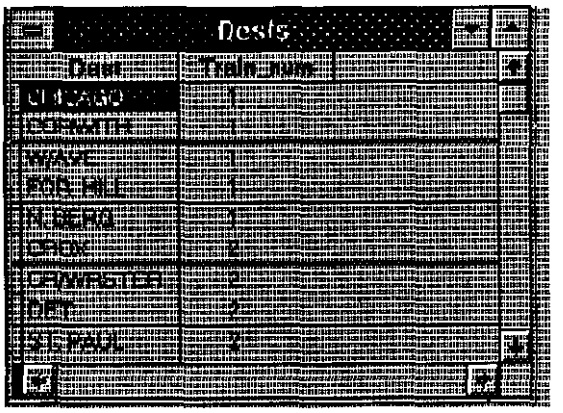
New Record opens the following screen for input of new arrival records. The first four fields must be filled in, the other fields may or may not be filled in, as appropriate.



Selecting Update Record opens the following screen. Entering a vessel and steamship company, followed by selecting FIND opens a copy of the above form, with the existing data already entered. Changes can be made and saved, or discarded.

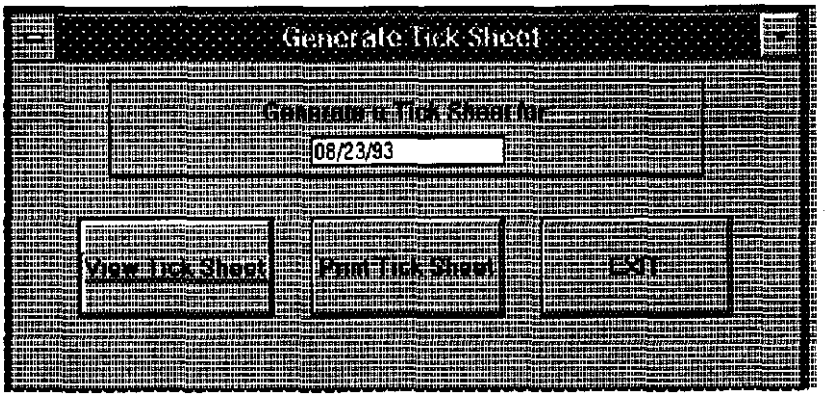


Finally, selecting **Modify Destinations** brings up the following window, to edit which train numbers are assigned to which destinations.



The strength of the Container Prediction Program, is in computing daily and weekly predictions. These are available through the report menu.

Select Tick Sheet to bring up the following dialog box



View or Print generates the same report, either to the screen (with view) or to the printer. The output is in the following form.

Container Projection for: 08/12/93

Destination	Number of 20'	Number of 40'
CHICAGO	17	7
CROX	18	0
KANSAS CIT	0	14
N. BERG	0	56
NEW YORK	10	0
PORTLAND	17	0
W/AVE	34	27

Selecting Projection results in a similar dialog box. The projection report includes day and date, shippers, total number of forty-foot equivilent units (FEUs), and number on each train. The following page is an example printout.

Seattle International Gateway Terminal
Projected Container Volumes For
08/12/93 Thru 08/20/93

Date of Projection: **08/23/93**

Day	Date	Shippers	Volume	Train	
Thursday	08/12/93			1	116
				2	9
				3	14
				4	9
		B, BOX, CAT, SMALL,	148		
Fridav	08/13/93			1	7
				3	3
		CAT,	12		
Saturday	08/14/93			1	5
				2	4
		S,	9		
Monday	08116/93			1	7
				4	5
		SPURGEON.	12		
Tuesday	08/17/93			1	5
				4	3
		SPURGEON.	8		

APPENDIX B

Technical Notes

Technical documentation
for
Container Forecasting Program V1.l

Lawrence Spurgeon

September 1993

Notes:

The program uses four databases:

- *arrivals.dbf* contains an assigned ID for each vessel and steamship company arrival, the vessel name, the steamship company, the start date, and the split percent.
- *contain.dbf* stores, by assigned ID, the number of 40' containers and the number of 20' containers to each destination.
- *dests.dbf* assigns each destination to a train number.
- *temp.dbf* is used for internal record keeping.

All records are deleted from the database after *6* months to speed the search and to minimize storage. Backups of the first two databases above can be made to store the records indefinitely. To disable this ability, the cleanup code in the con–for menu must be changed (con_for.mnx) and the project recompiled. This is straight-foreword to do under the Menu/General Options selection while the con_for.mnx file is open.

The Project contains the following elements

- About Screen Set - note changes to the project in this screen as well as this file.
- Arrivals - see data base definition above
- Config.fdw - this is a documenting file, fairly useless.
- Contain - see above.
- Con_for - program that is the compiled menu program con_for.mnx
- Destbydt - the report form for tic sheet reports

- Dests - see above.
- Find - screen and code to locate records for update record.
- **Forcast** - report of weekly forecast
- Input - program and screen set to enter new arrivals
- **Projrpt** - screen set and code to generate projection report.
- Proprindview - prints or views the weekly forecast report
- Temp - see above.
- **Ticprint/view** - prints or views tic sheet
- **Ticsheet** - interface screen to generate tic sheet.
- Update - screen that updates the records when arrival projections change
- **Update1/2** - support code to allow update to run.

TECDOC.DOC

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3. From the ***Reports*** menu,
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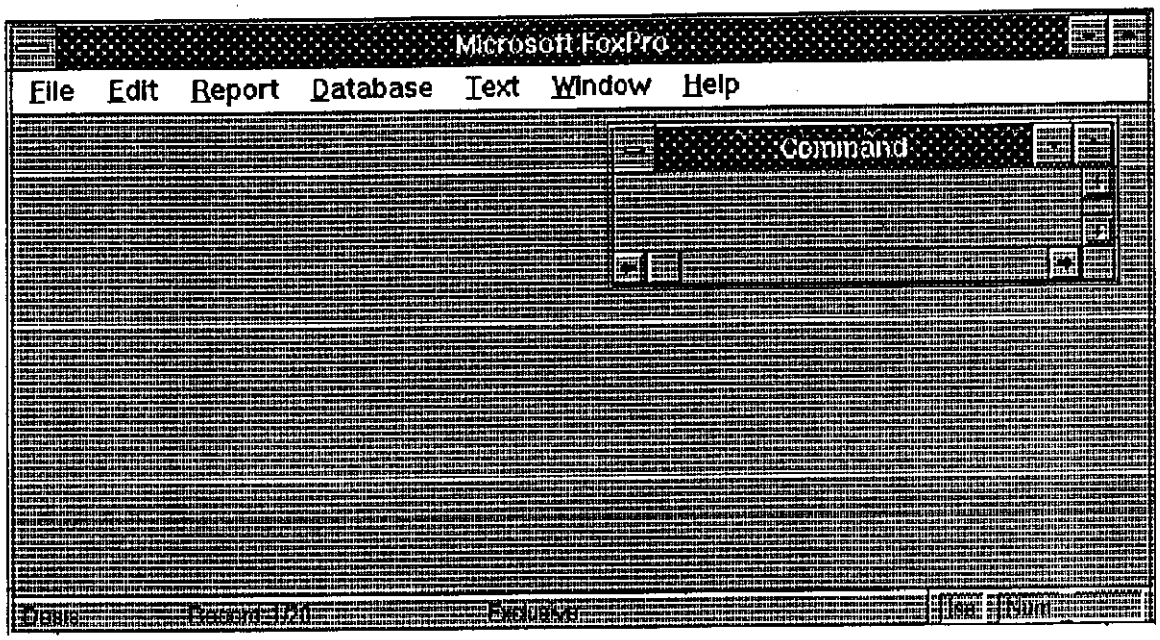

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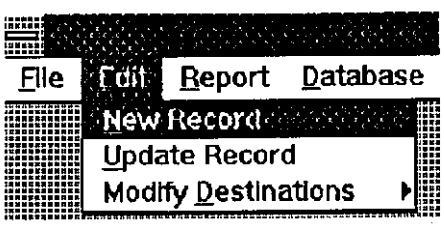

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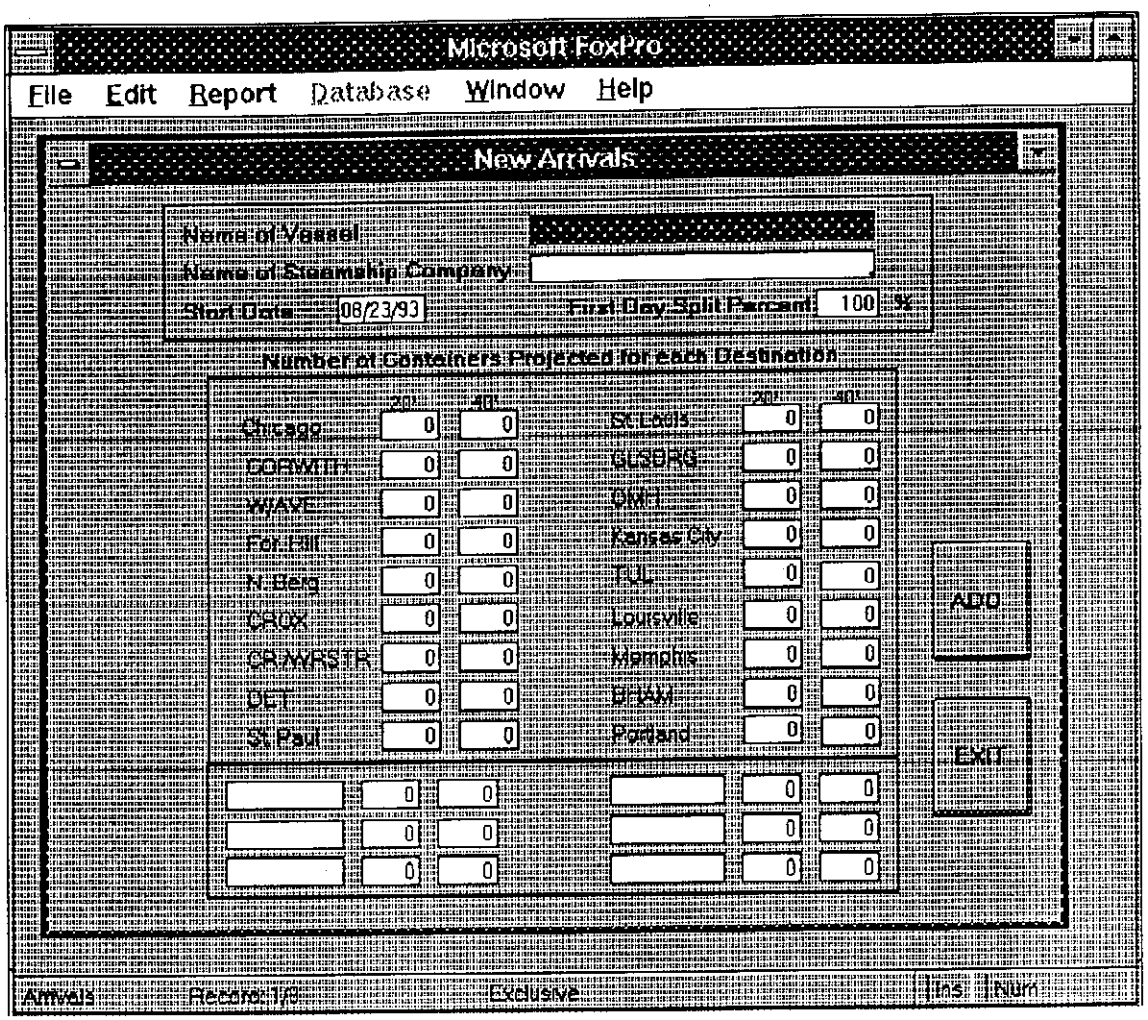

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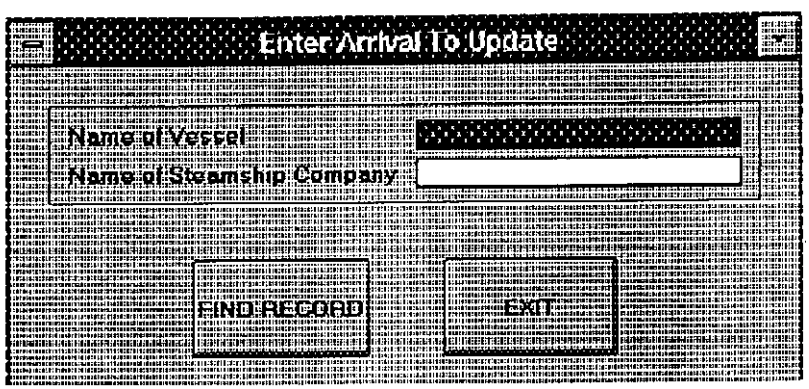

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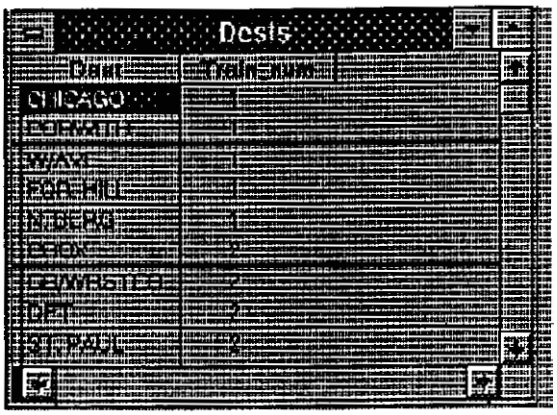

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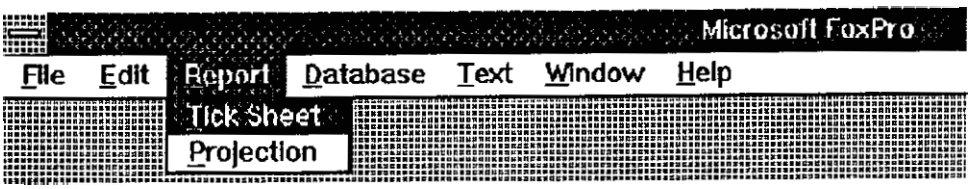

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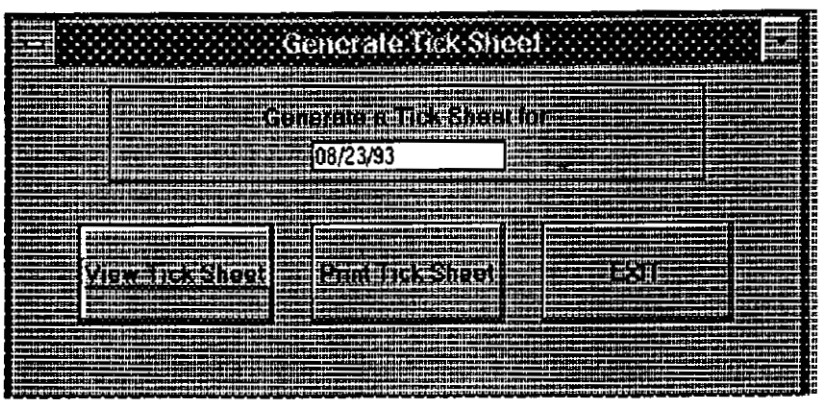

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