

**PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Rail Safety and Carriers Division  
Rail Engineering Safety Branch  
Rail Transit Safety Section

Resolution ST-41  
Date: January 7, 1999

**RESOLUTION**

**RESOLUTION ST-41. TO ADOPT A JOINT REPORT PREPARED BY THE RAIL SAFETY AND CARRIERS DIVISION AND THE SAN FRANCISCO MUNICIPAL RAILWAY (SF MUNI) ESTABLISHING SAFETY RELATED IMPROVEMENTS TO BE MADE TO SF MUNI LIGHT RAIL TRAIN OPERATIONS**

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**Summary**

Investigations of SF MUNI light rail system accidents, performed by the Commission staff and the National Transportation Safety Board (NTSB) in 1997, revealed evidence of systemic safety problems. Those findings led to an in-depth safety review of SF MUNI's management structure, operating practices and maintenance programs by a panel of rail industry experts assembled by the American Public Transit Association (APTA). The APTA panel performed a comprehensive safety review and issued a final report containing 50 recommendations to improve MUNI's light rail system safety. In response, SF MUNI prepared an action plan to address all 50 recommendations.

In Resolution ST-37, the Commission accepted the APTA safety review panel's report and required the Commission staff and SF MUNI to work together in preparing a report identifying those recommendations from the APTA report which offer the greatest benefit in promptly resolving identified systemic safety issues. The joint report was to also include the plans and schedules for implementing the specially selected recommendations. The Commission staff and SF MUNI completed the required report on December 10, 1998 and submitted it to the Commission. The Commission staff will monitor implementation of the 50 APTA panel recommendations and will focus particular oversight attention on those recommendations specially addressed in the joint report. In addition, the Commission staff will meet at least once a month with SF MUNI to review and discuss the status of the recommended safety improvements.

## Background

On January 26, 1996, the Federal Transit Administration issued rule 49 CFR Part 659, State Safety Oversight of Rail Fixed Guideway Systems. In response, on September 20, 1996, the Commission issued General Order No. 164, Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems (superceded by G.O. No. 164-A on October 1, 1997). As a result, the Commission's safety oversight responsibility and authority expanded to include SF MUNI rail transit systems as of January 1, 1997.

During the first nine months of 1997, SF MUNI reported 146 rail accidents to the Commission. Many of the same accidents were also reported by SF MUNI to the NTSB. The findings of the accident investigations and the volume of accidents led the NTSB to issue a formal report with recommendations to SF MUNI, the Governor and the Commission in September 1997. The report concluded that there was sufficient evidence of unresolved system safety issues to warrant a formal safety review of SF MUNI's management structure, maintenance programs, and operating procedures. The Commission staff, as well as SF MUNI, concurred with the NTSB's conclusions. A meeting, attended by all three parties, was held on September 18, 1997 to make arrangements for APTA to coordinate a comprehensive safety review of the SF MUNI light rail system. APTA assembled a panel of industry professionals, with expertise in specific areas of rail operations and maintenance, to perform the safety review.

With full time oversight and participation by the Commission staff, the panel performed its comprehensive review of the SF MUNI light rail system during the first week of February, 1998. The panel issued a final report containing its findings and 50 recommendations during the last week of April, 1998. The panel's recommendations address safety in the full spectrum of SF MUNI's light rail activities.

SF MUNI and the Commission staff reviewed and accepted the report and its recommendations. They also concluded, however, that certain of the recommendations would provide greater and more immediate safety improvement for the light rail system.

## Discussion

In Resolution ST-37, dated June 18, 1998, the Commission accepted the APTA safety review panel's report and stated support for SF MUNI's plans to address all 50 of the report's safety recommendations. It was further noted in the resolution that certain recommendations appeared to offer greater benefit in promptly resolving identified systemic safety problems and preventing light rail system accidents. As a result, the resolution also required the Commission staff and SF MUNI to cooperate in the preparation of an additional report. That joint report would identify recommendations

which would provide the greatest safety benefit and would also include plans and schedules for implementation of the selected recommendations.

The Commission staff and SF MUNI, working together, identified four recommendations from the APTA safety review panel's report which appear to offer the greatest benefits in promptly resolving light rail systemic safety issues. The four selected recommendations identified are:

- 3.1 – Retrain all employees on the updated rules and procedures.
- 4.1 – Update all operating rules and procedures.
- 4.6 – Establish a program of compliance checks for operational performance.
- 4.8 – Develop and implement accident / incident management procedures in accordance with revised SOPs.

Additionally, they developed project plans and milestone schedules to guide the implementation of the selected recommendations. This information was combined into the required joint report and submitted to the Commission on December 10, 1998.

The joint report explains that SF MUNI plans to implement all 50 recommendations from the APTA safety review panel and will focus particular attention on the four specially selected recommendations identified in the joint report. Implementation activities will be carried out according to the plans and schedules contained in the joint report. The Commission staff will oversee implementation of all 50 APTA safety review panel recommendations and will carefully monitor the specially selected recommendations to ensure they are appropriately and expeditiously addressed. Until all the recommendations are implemented, SF MUNI and the Commission staff will meet at least once a month to review and ensure the satisfactory progress of each task.

Pursuant to PU Code Section 311(g)(2), the parties (Rail Safety and Carriers Division and SF MUNI) have stipulated to waive the 30-day period for public review and comment so that this resolution may be considered at the January 7, 1999 Commission meeting.

### Findings

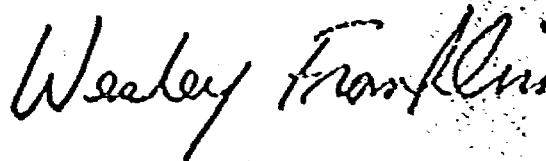
1. The Commission staff and the NTSB identified evidence of unresolved systemic safety issues associated with the SF MUNI light rail transit system.

2. A panel of industry experts, assembled by APTA, performed a safety review of the SF MUNI light rail system and issued a final report containing 50 recommendations for safety improvements.
3. SF MUNI prepared an action plan to address all 50 recommendations.
4. The Commission issued Resolution ST-37 accepting the APTA safety review panel's report and required SF MUNI to work with the Commission staff in preparing a report which would include those recommendations identified as providing the most benefit to immediate safety improvement. The Commission also required the joint report to include detailed project plans and milestone schedules for implementation of each of the selected recommendations.
5. SF MUNI and the Commission staff, working together, identified four safety recommendations from the APTA safety review panel's final report, for special attention to provide beneficial and more immediate safety improvement to the light rail system.
6. SF MUNI and the Commission staff prepared a joint report, required by Resolution ST-37, and submitted it to the Commission on December 10, 1998.

#### Order

1. The December 10, 1998 report, jointly prepared by SF MUNI and the Commission staff as required by Resolution ST-37, is accepted and appended to this resolution.
2. The four specially selected recommendations to improve the safety of the SF MUNI light rail transit system identified in the December 10, 1998 report shall be implemented by SF MUNI according to the plans and schedules also included in the same report.
3. SF MUNI shall meet with the Commission staff at least once a month, beginning in January 1999 to review and discuss the status of progress in implementing the four recommendations identified in the December 10, 1998 report as well as the remaining recommendations identified in the APTA safety review panel's April 1998 report appended to Resolution ST-37.

I certify that this resolution was adopted by the Public Utilities Commission of the State at its regular meeting in California held on January 7, 1999. The following Commissioners voting favorably thereon:



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WESLEY M. FRANKLIN  
Executive Director

Richard A. Bilas  
President  
Henry M. Duque  
Josiah L. Neeper  
Commissioners

JOINT REPORT OF  
THE SAN FRANCISCO MUNICIPAL RAILWAY  
AND  
THE RAIL SAFETY AND CARRIERS DIVISION  
OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION  
ESTABLISHING REQUIREMENTS FOR SAFETY RELATED  
IMPROVEMENTS TO BE MADE TO  
SF MUNI'S LIGHT RAIL TRAIN OPERATIONS

DECEMBER 10, 1998

APPROVED BY:

  
SF MUNICIPAL RAILWAY

DATE: 12.10.98

APPROVED BY:

  
RAIL SAFETY & CARRIERS DIVISION  
CPUC

DATE: 12.10.98

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## INTRODUCTION

The San Francisco Municipal Railway (SF Muni), acting in response to National Transportation Safety Board (NTSB) recommendation R-97-46, and with the concurrence of both the NTSB and California Public Utilities Commission (Commission), contracted with the American Public Transit Association (APTA) for a safety review panel of industry experts to perform a comprehensive study of SF Muni's light rail train operations and infrastructure. The APTA safety review panel completed its work and issued a final report in April, 1998. The report contained 50 recommendations for a wide variety of program improvements. On June 18, 1998, the Commission issued Resolution ST-37 calling on SF Muni to work in conjunction with the Commission's staff, and to select those recommendations from the APTA report that appear to have the greatest potential for improving the safety of SF Muni's light rail train operations. Resolution ST-37 also requires SF Muni and the Commission's staff to prepare this joint report identifying the specially selected recommendations, and describing the project plans and milestone schedules that will be used to assure that the tasks required to implement the recommendations are identified.

## THE SELECTED RECOMMENDATIONS

Working together, staff of the SF Muni and the Commission selected the below listed four recommendations from the APTA safety review panel's final report. These four recommendations were selected on the basis that they appear to offer the greatest potential for improving the safety of SF Muni's light rail train operations. The selected recommendations, along with comments on the rationale for each selection and the scope of each recommendation, are presented below:

1. APTA safety review panel recommendation 4.1 – Update all operating rules and procedures

The findings presented in the APTA safety review panel's final report clearly show that there is a manifest need for SF Muni to prepare and issue a revised, up to date, useable, and enforceable, operating rule book. In addition, the APTA report also shows there is an equally evident and important need to prepare and issue a complete set of supplemental operating procedures to compliment the basic rule book. Maintenance procedures are to be reviewed during the Muni internal audit and upcoming triennial audit.



2. **APTA safety review panel recommendation 3.1 – Retrain all employees on the updated rules and procedure**

In making this recommendation, the APTA safety review panel pointed out that SF Muni's investment in training its employees will always pay off in reduced accidents, incidents, etc. The development of a comprehensive training and certification program for employees will be required to fully satisfy this recommendation. This recommendation is also a natural follow on to upgrading the operations and maintenance procedures that will be accomplished under item 1 above.

3. **APTA safety review panel recommendation 4.6 – Establish a program of compliance checks for operational performance.**

The APTA safety review panel classified this recommendation as an essential management function for ensuring adherence to the established operating rules and procedures by the people responsible for the safety of train operations.

4. **APTA safety review panel recommendation 4.8 – Develop and implement accident / Incident management procedures in accordance with revised SOPs.**

A complete set of management procedures for reporting, investigating and analyzing accidents and incidents, identifying causes and trends and taking effective corrective action will have to be developed and implemented to fully satisfy this recommendation.

### **PLANNING AND SCHEDULING**

The plans and schedules necessary to accomplish the recommended actions are contained in the Attachment - Planning and Scheduling.

### **FOLLOW UP REPORTING**

The SF Muni Office of System Safety will be responsible for monitoring this effort to assure the work performed is fully responsive to the plans and schedules. Beginning in CY1999, Q1, SF Muni will submit quarterly progress reports to the Commission. These reports will continue until all of the work required to implement the four selected recommendations has been completed. Each quarterly progress report will show any changes that are made to the SF Muni Safety Plan, and a description of the work completed and the work remaining for each recommendation.

**ATTACHMENT - PLANNING AND SCHEDULING**

**TO**

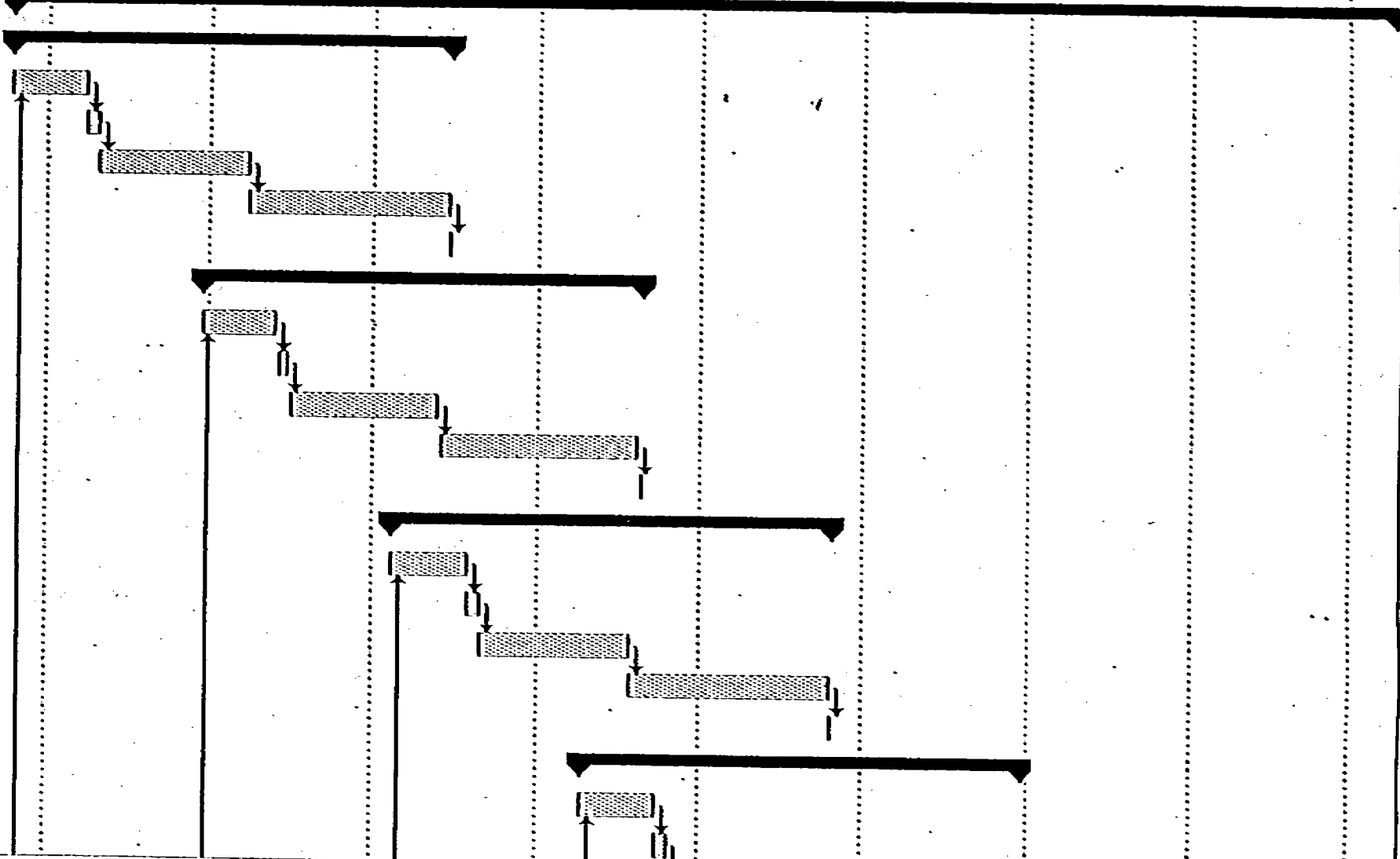
**JOINT REPORT OF  
THE SAN FRANCISCO MUNICIPAL RAILWAY  
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THE RAIL SAFETY AND CARRIERS DIVISION  
OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION  
ESTABLISHING REQUIREMENTS FOR SAFETY RELATED IMPROVEMENTS  
TO BE MADE TO  
SF MUNI'S LIGHT RAIL TRAIN OPERATIONS**

**DECEMBER 10, 1998**

ID	Task Name	Duration	Start	Finish	1st Quarter		2nd Quarter			3rd Quarter			4th Quarter		
					Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
70	J.1 Retrain all employees on updated rules and	556 days	Fri 3/12/99	Fri 4/27/01											
71	a. Retrain Operators	176 days	Fri 3/12/99	Fri 11/12/99											
72	i. Prepare training modification plan	30 days	Fri 3/12/99	Thu 4/22/99											
73	ii. Approve training program	5 days	Fri 4/23/99	Thu 4/29/99											
74	iii. Request funding for new training prog	60 days	Fri 4/30/99	Thu 7/22/99											
75	iv. Implement training program	80 days	Fri 7/23/99	Thu 11/11/99											
76	v. Monitor progress and effectiveness	1 day	Fri 11/12/99	Fri 11/12/99											
77	b. Retrain Central Control Staff	176 days	Mon 6/28/99	Mon 2/28/00											
78	i. Prepare training modification plan	30 days	Mon 6/28/99	Fri 8/6/99											
79	ii. Approve training program	5 days	Mon 8/9/99	Fri 8/13/99											
80	iii. Request funding for new training prog	60 days	Mon 8/16/99	Fri 11/5/99											
81	iv. Implement training program	60 days	Mon 11/8/99	Fri 2/25/00											
82	v. Monitor progress and effectiveness	1 day	Mon 2/28/00	Mon 2/28/00											
83	c. Retrain Subway Staff	176 days	Tue 10/12/99	Tue 6/13/00											
84	i. Prepare training modification plan	30 days	Tue 10/12/99	Mon 11/22/99											
85	ii. Approve training program	5 days	Tue 11/23/99	Mon 11/29/99											
86	iii. Request funding for new training prog	60 days	Tue 11/30/99	Mon 2/21/00											
87	iv. Implement training program	60 days	Tue 2/22/00	Mon 6/12/00											
88	v. Monitor progress and effectiveness	1 day	Tue 6/13/00	Tue 6/13/00											
89	d. Retrain Rail Inspection Staff	176 days	Wed 1/26/00	Wed 9/27/00											
90	i. Prepare training modification plan	30 days	Wed 1/26/00	Tue 3/7/00											
91	ii. Approve training program	5 days	Wed 3/8/00	Tue 3/14/00											

Project: safetyplan Date: Wed 12/9/98	Task		Rollup Task		Project Summary	
	Progress		Rollup Milestone		Split	.....
	Milestone		Rollup Progress		Rollup Split	.....
	Summary		External Tasks			

1st Quarter		2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd	
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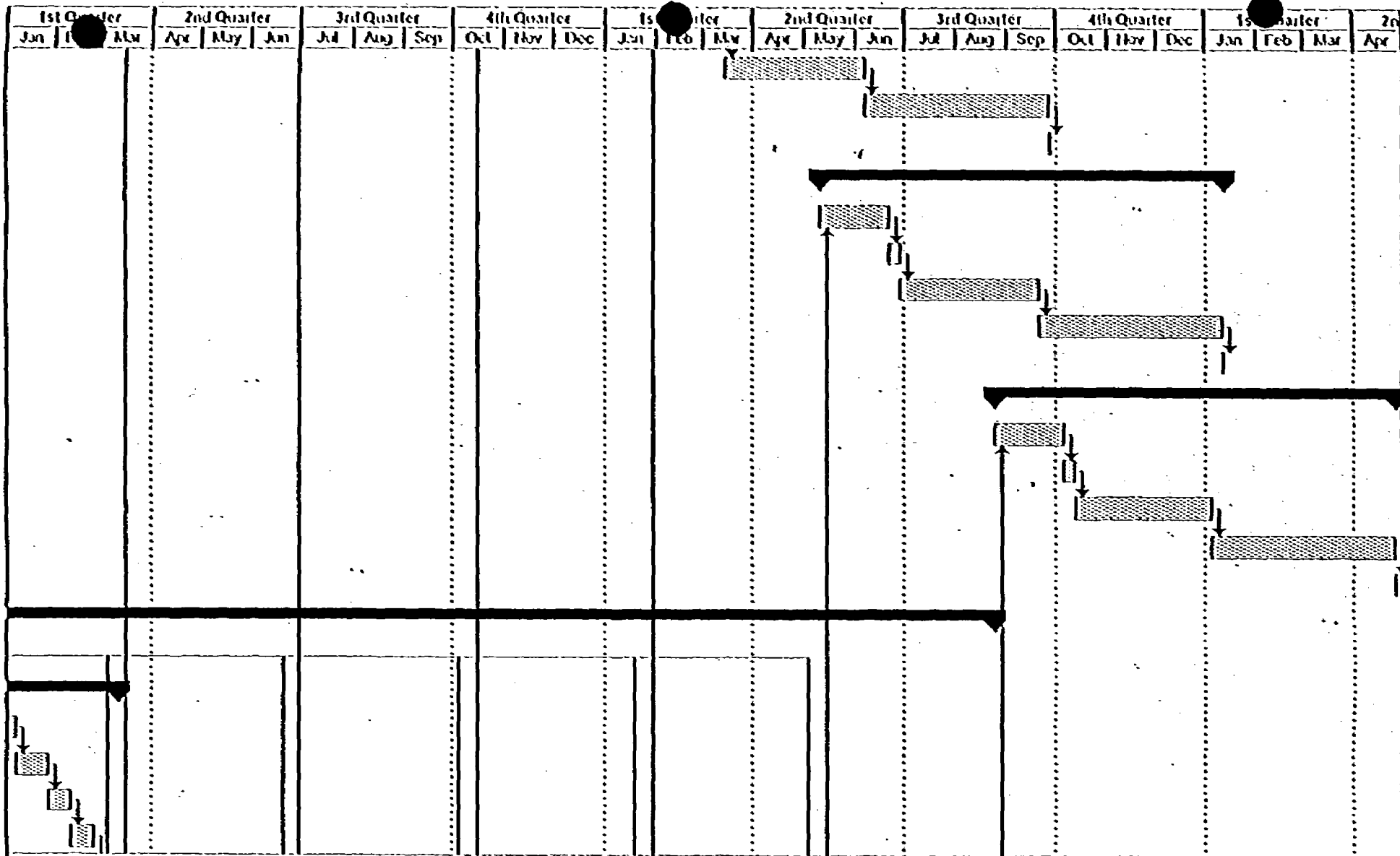


Project: safetyplan  
Date: Wed 12/2/98

Task		Rolled Up Task		Project Summary	
Progress		Rolled Up Milestone		Spit	
Milestone		Rolled Up Progress		Rolled Up Spit	
Summary		External Tasks			

ID	Task Name	Duration	Start	Finish	1st Quarter		2nd Quarter			3rd Quarter			4th Quarter		
					Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
92	iii. Request funding for new training prog	60 days	Wed 3/15/00	Tue 6/5/00											
93	iv. Implement training program	80 days	Wed 6/7/00	Tue 9/26/00											
94	v. Monitor progress and effectiveness	1 day	Wed 9/27/00	Wed 9/27/00											
95	e. Retrain Station Operations Staff	176 days	Thu 5/11/00	Thu 1/11/01											
96	i. Prepare training modification plan	30 days	Thu 5/11/00	Wed 6/21/00											
97	ii. Approve training program	5 days	Thu 6/22/00	Wed 6/28/00											
98	ii. Request funding for new training prog	60 days	Thu 6/29/00	Wed 9/20/00											
99	iv. Implement training program	80 days	Thu 9/21/00	Wed 1/10/01											
100	v. Monitor progress and effectiveness	1 day	Thu 1/11/01	Thu 1/11/01											
101	f. Retrain Instructors	176 days	Fri 8/25/00	Fri 4/27/01											
102	i. Prepare training modification plan	30 days	Fri 8/25/00	Thu 10/5/00											
103	ii. Approve training program	5 days	Fri 10/6/00	Thu 10/12/00											
104	iii. Request funding for new training prog	60 days	Fri 10/13/00	Thu 1/4/01											
105	iv. Implement training program	80 days	Fri 1/5/01	Thu 4/26/01											
106	v. Monitor progress and effectiveness	1 day	Fri 4/27/01	Fri 4/27/01											
135	4.1 Update operating rules and procedures.	539 days	Mon 8/3/98	Thu 8/24/00											
136	a. ID rules and procedures for review	83 days	Mon 8/3/98	Wed 11/25/98											
137	b. Dev. New Train Operator Manual	76 days	Thu 11/26/98	Thu 3/11/99											
138	i. Prepare first draft	30 days	Thu 11/26/98	Wed 1/6/99											
139	ii. Send out for comments	15 days	Thu 1/7/99	Wed 1/27/99											
140	iii. Incorporate appropriate comments	10 days	Thu 1/28/99	Wed 2/10/99											
141	iv. Prepare final draft	10 days	Thu 2/11/99	Wed 2/24/99											

Project: safetyplan Date: Wed 12/2/98	Task		Rolled Up Task		Project Summary	
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	Summary		External Tasks			

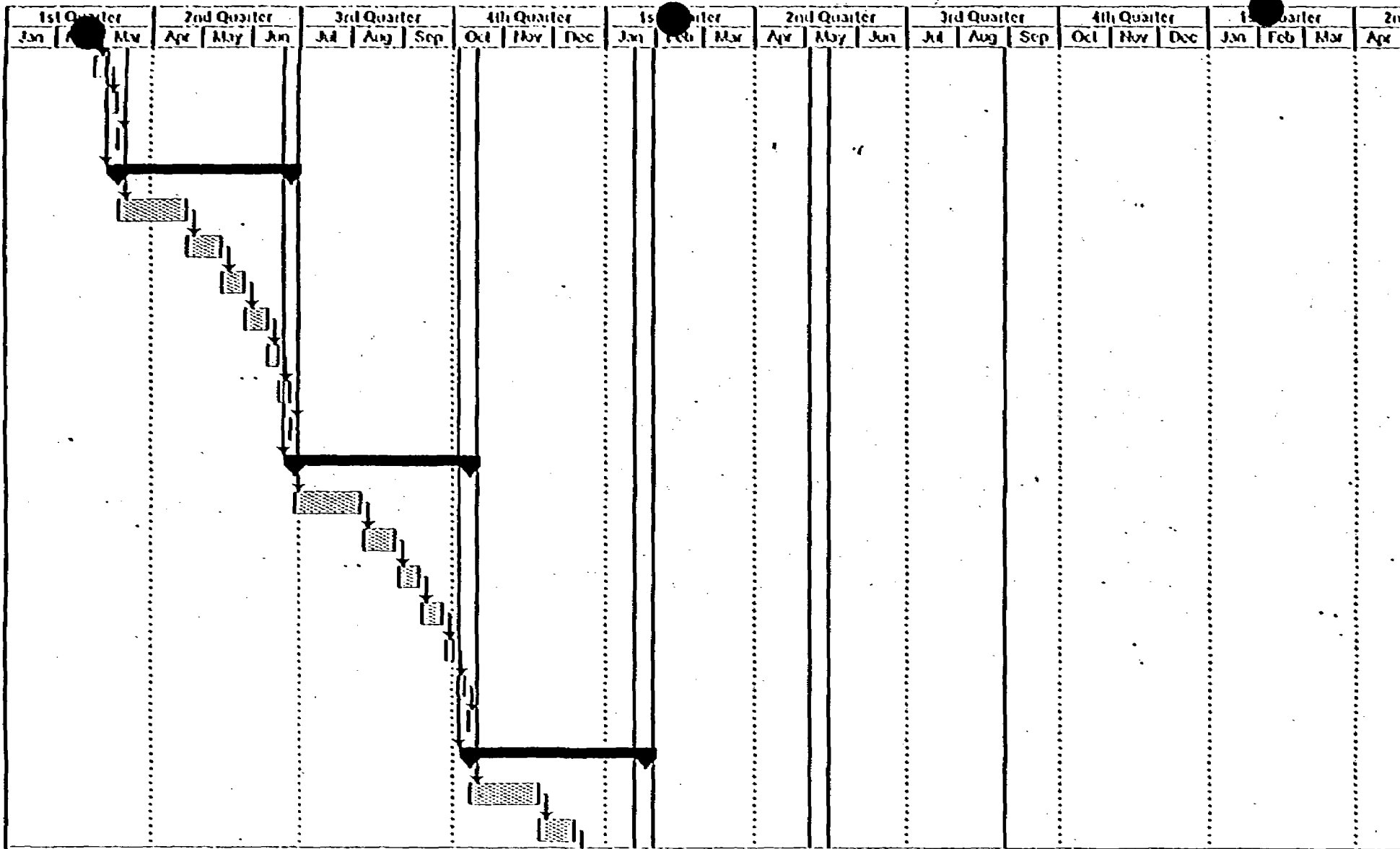


Project: safetyplan  
Date: Wed 12/3/98

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Milestone		Rolled Up Progress		Rolled Up Split	
Summary		External Tasks			

ID	Task Name	Duration	Start	Finish	Quarter		2nd Quarter			3rd Quarter			4th Quarter		
					Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
142	v. Conduct formal meet and confer	5 days	Thu 2/25/99	Wed 3/3/99											
143	vi. Approve final manual	5 days	Thu 3/4/99	Wed 3/10/99											
144	vii. Issue New Train Operator Manual	1 day	Thu 3/11/99	Thu 3/11/99											
145	c. Dev. New Central Control Manual	76 days	Fri 3/17/99	Fri 6/25/99											
146	i. Prepare first draft	30 days	Fri 3/17/99	Thu 4/22/99											
147	ii. Send out for comments	15 days	Fri 4/23/99	Thu 5/13/99											
148	iii. Incorporate appropriate comments	10 days	Fri 5/14/99	Thu 5/27/99											
149	iv. Prepare final draft	10 days	Fri 5/28/99	Thu 6/10/99											
150	v. Conduct formal meet and confer	5 days	Fri 6/11/99	Thu 6/17/99											
151	vi. Approve final manual	5 days	Fri 6/18/99	Thu 6/24/99											
152	vii. Issue New Central Control Manual	1 day	Fri 6/25/99	Fri 6/25/99											
153	d. Dev. New Subway Safety Manual	76 days	Mon 6/28/99	Mon 10/11/99											
154	i. Prepare first draft	30 days	Mon 6/28/99	Fri 8/6/99											
155	ii. Send out for comments	15 days	Mon 8/9/99	Fri 8/27/99											
156	iii. Incorporate appropriate comments	10 days	Mon 8/30/99	Fri 9/10/99											
157	iv. Prepare final draft	10 days	Mon 9/13/99	Fri 9/24/99											
158	v. Conduct formal meet and confer	5 days	Mon 9/27/99	Fri 10/1/99											
159	vi. Approve final manual	5 days	Mon 10/4/99	Fri 10/8/99											
160	vii. Issue New Subway Safety Manual	1 day	Mon 10/11/99	Mon 10/11/99											
161	e. Dev. New Rail Inspection Manual	76 days	Tue 10/12/99	Tue 1/25/00											
162	i. Prepare first draft	30 days	Tue 10/12/99	Mon 11/22/99											
163	ii. Send out for comments	15 days	Tue 11/23/99	Mon 12/13/99											

Project: safetyplan Date: Wed 12/9/98	Task		Rolled Up Task		Project Summary	
	Progress		Rolled Up Milestone		Split	.....
	Milestone		Rolled Up Progress		Rolled Up Split	.....
	Summary		External Tasks			



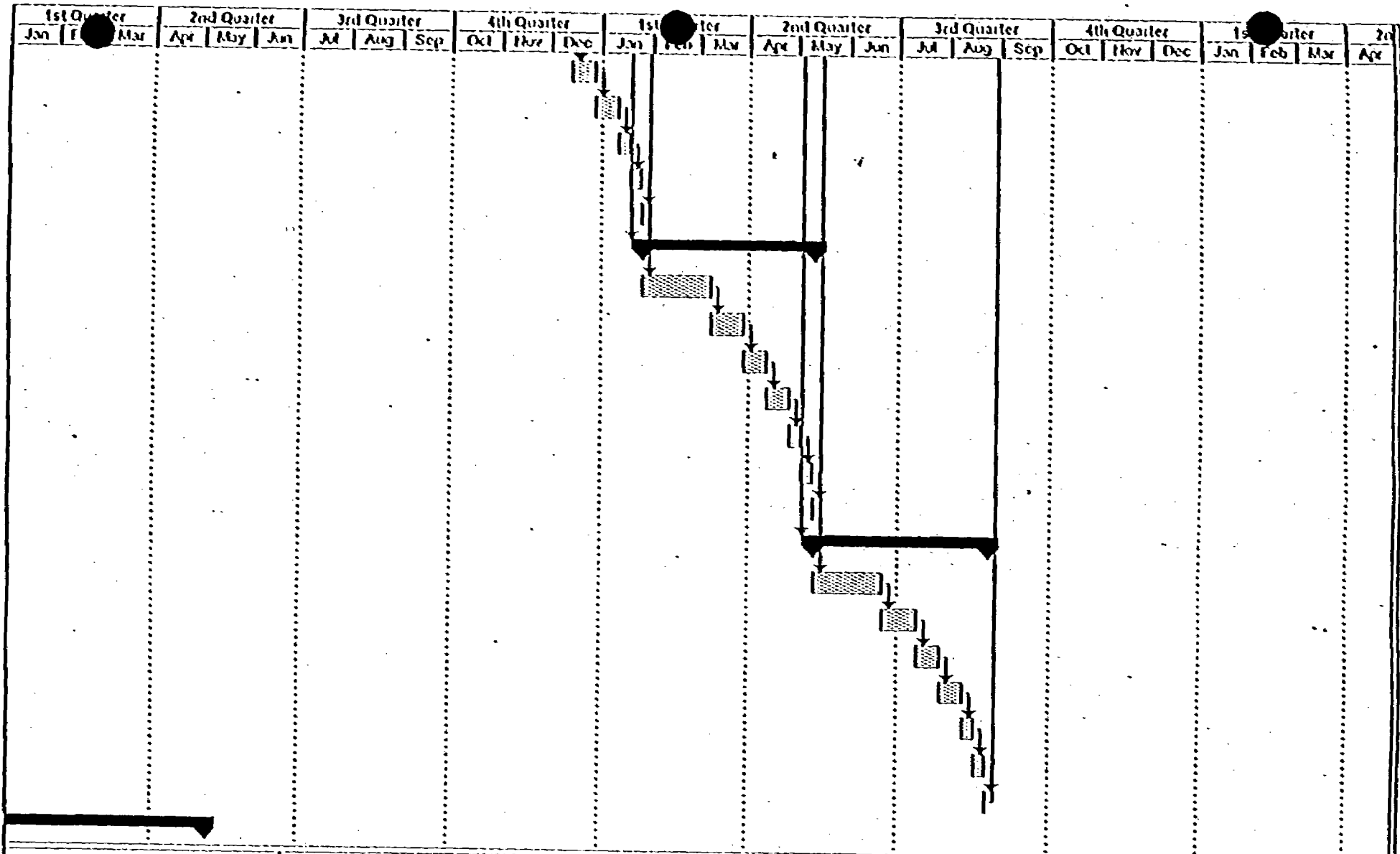
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Date: Wed 12/3/98

Task		Rolled Up Task		Project Summary	
Progress		Rolled Up Milestone		Split	
Milestone		Rolled Up Progress		Rolled Up Split	
Summary		External Tasks			



ID	Task Name	Duration	Start	Finish	Quarter		2nd Quarter			3rd Quarter			4th Quarter		
					Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
164	iii. Incorporate appropriate comments	10 days	Tue 12/14/99	Mon 12/27/99											
165	iv. Prepare final draft	10 days	Tue 12/28/99	Mon 1/10/00											
166	v. Conduct formal meet and confer	5 days	Tue 1/11/00	Mon 1/17/00											
167	vi. Approve final manual	5 days	Tue 1/18/00	Mon 1/24/00											
168	vii. Issue New Rail Inspection Manual	1 day	Tue 1/25/00	Tue 1/25/00											
169	f. Dev. New Station Operations Manual	76 days	Wed 1/26/00	Wed 5/10/00											
170	i. Prepare first draft	30 days	Wed 1/26/00	Tue 3/7/00											
171	ii. Send out for comments	15 days	Wed 3/8/00	Tue 3/28/00											
172	iii. Incorporate appropriate comments	10 days	Wed 3/29/00	Tue 4/11/00											
173	iv. Prepare final draft	10 days	Wed 4/12/00	Tue 4/25/00											
174	v. Conduct formal meet and confer	5 days	Wed 4/26/00	Tue 5/2/00											
175	vi. Approve final manual	5 days	Wed 5/3/00	Tue 5/9/00											
176	vii. Issue New Station Operations Manual	1 day	Wed 5/10/00	Wed 5/10/00											
177	g. Dev. New Instructor's Manual	76 days	Thu 5/11/00	Thu 6/24/00											
178	i. Prepare first draft	30 days	Thu 5/11/00	Wed 6/21/00											
179	ii. Send out for comments	15 days	Thu 6/22/00	Wed 7/12/00											
180	iii. Incorporate appropriate comments	10 days	Thu 7/13/00	Wed 7/26/00											
181	iv. Prepare final draft	10 days	Thu 7/27/00	Wed 8/9/00											
182	v. Conduct formal meet and confer	5 days	Thu 8/10/00	Wed 8/16/00											
183	vi. Approve final manual	5 days	Thu 8/17/00	Wed 8/23/00											
184	vii. Issue New Station Operations Manual	1 day	Thu 8/24/00	Thu 8/24/00											
206	4.6 Establish compliance check program for o	260 days	Wed 5/6/98	Tue 5/4/99											

Project: safetyplan Date: Wed 12/9/99	Task		Rolled Up Task		Project Summary	
	Progress		Rolled Up Milestone		Split	
	Milestone		Rolled Up Progress		Rolled Up Split	
	Summary		External Tasks			

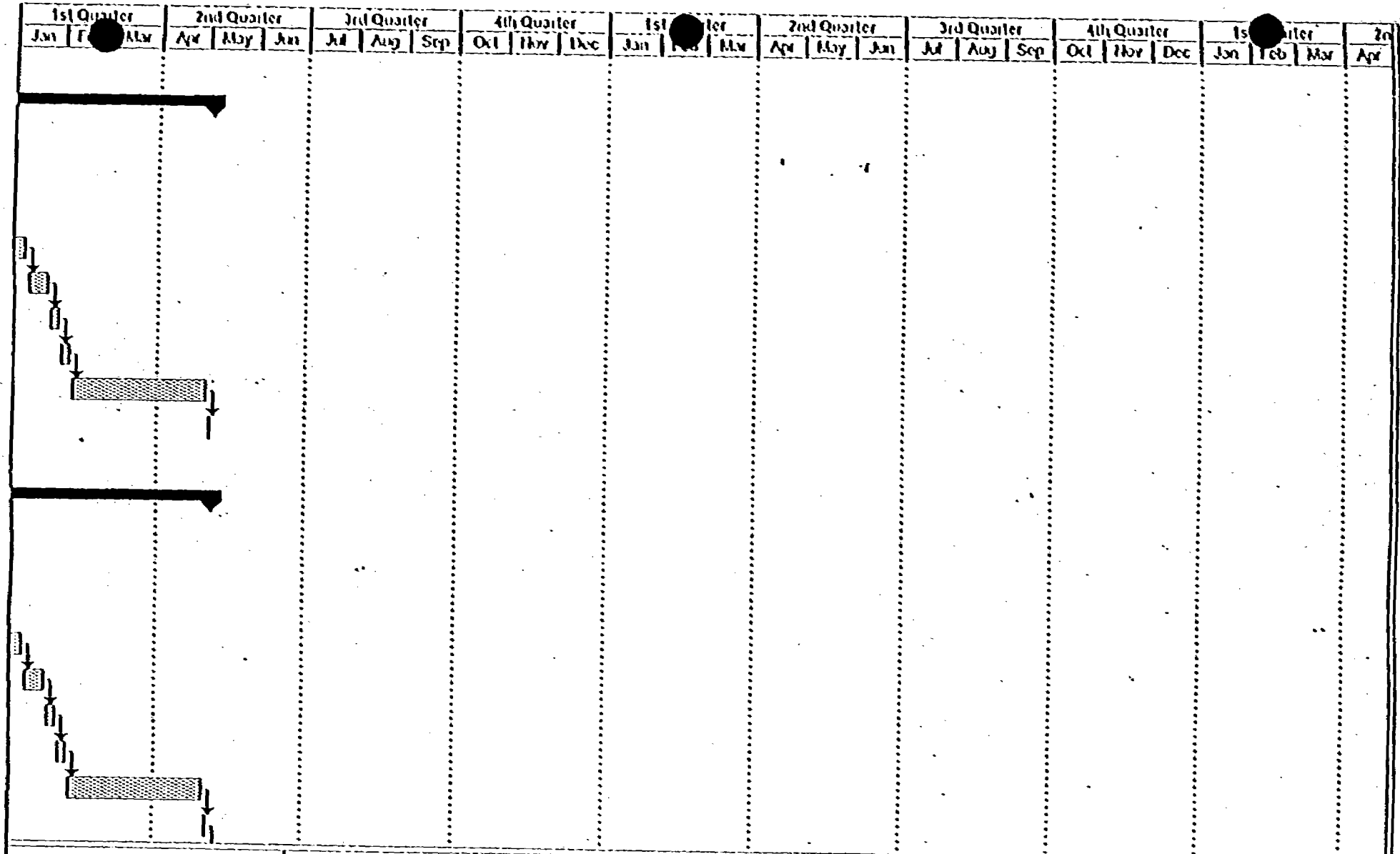


Project: safety plan Date: Wed 12/2/98	Task		Rollup Task		Project Summary	
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	Milestone		Rollup Progress		Rollup Split	.....
	Summary		External Tasks			

ID	Task Name	Duration	Start	Finish	Quarter		2nd Quarter			3rd Quarter			4th Quarter		
					Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
207	a. Define scope of compliance checks	30 days	Mon 8/3/98	Fri 9/11/98											
208	b. Draft comp. checks for Train Operators	259 days	Wed 5/6/98	Mon 5/3/99											
209	i. Review external requirements for oper:	30 days	Mon 9/14/98	Fri 10/23/98											
210	ii. Prepare first draft	30 days	Mon 10/26/98	Fri 12/4/98											
211	iii. Send out for comments	15 days	Mon 12/7/98	Fri 12/25/98											
212	iv. Incorporate appropriate comments	10 days	Mon 12/28/98	Fri 1/8/99											
213	v. Prepare final draft	10 days	Mon 1/11/99	Fri 1/22/99											
214	vi. Conduct formal meet and confer	5 days	Mon 1/25/99	Fri 1/29/99											
215	vii. Approve final program	5 days	Mon 2/1/99	Fri 2/5/99											
216	viii. Budget for resources to implement p	60 days	Mon 2/8/99	Fri 4/30/99											
217	ix. Implement new program for Train Oer	1 day	Mon 5/3/99	Mon 5/3/99											
218	x. Monitor program for effectiveness	1 day	Wed 5/6/98	Wed 5/6/98											
219	c. Draft comp. checks for Central Control	167 days	Mon 9/14/98	Tue 5/4/99											
220	i. Review external requirements for oper:	30 days	Mon 9/14/98	Fri 10/23/98											
221	ii. Prepare first draft	30 days	Mon 10/26/98	Fri 12/4/98											
222	iii. Send out for comments	15 days	Mon 12/7/98	Fri 12/25/98											
223	iv. Incorporate appropriate comments	10 days	Mon 12/28/98	Fri 1/8/99											
224	v. Prepare final draft	10 days	Mon 1/11/99	Fri 1/22/99											
225	vi. Conduct formal meet and confer	5 days	Mon 1/25/99	Fri 1/29/99											
226	vii. Approve final program	5 days	Mon 2/1/99	Fri 2/5/99											
227	viii. Budget for resources to implement p	60 days	Mon 2/8/99	Fri 4/30/99											
228	ix. Implement new program for Central Co	1 day	Mon 5/3/99	Mon 5/3/99											

Project: safetyplan  
Date: Wed 12/9/98

Task		Rollup Task		Project Summary	
Progress		Rollup Milestone		Split	
Milestone		Rollup Progress		Rollup Split	
Summary		External Tasks			





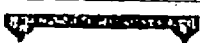





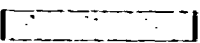
Project: safetyplan  
Date: Wed 12/9/98

Task		Rollup Task		Project Summary	
Progress		Rollup Milestone		Split	
Milestone		Rollup Progress		Rollup Split	
Summary		External Tasks			

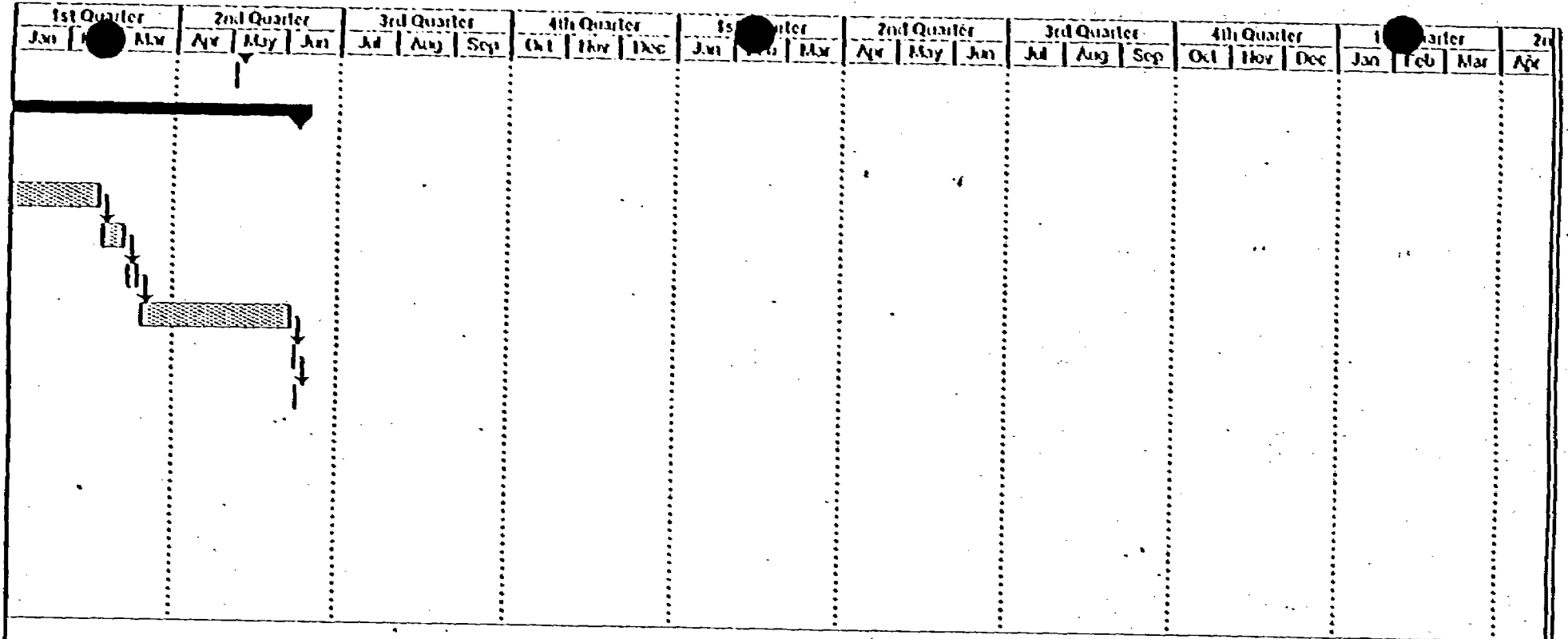
ID	Task Name	Duration	Start	Finish	Quarter		2nd Quarter			3rd Quarter			4th Quarter		
					Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
229	x. Monitor program for effectiveness	1 day	Tue 5/4/99	Tue 5/4/99											
239	4.8 Dev/Impl Incident mgmt procedures	157 days	Mon 11/2/98	Tue 6/8/99											
240	a. ID deficiencies in current SOPS	40 days	Mon 11/2/98	Fri 12/25/98											
241	b. Revise SOPS and distribute draft revisions	40 days	Mon 12/28/98	Fri 2/19/99											
242	c. Incorporate comments	10 days	Mon 2/22/99	Fri 3/5/99											
243	d. Approve final SOPS	5 days	Mon 3/8/99	Fri 3/12/99											
244	d. Request funding for new SOP implemental	60 days	Mon 3/15/99	Fri 6/4/99											
245	e. Issue revised SOP to affected employees	1 day	Mon 6/7/99	Mon 6/7/99											
246	f. Monitor adherence to procedures	1 day	Tue 6/8/99	Tue 6/8/99											

CCO Chief Construction Officer  
 CFO Chief Financial Officer  
 COO Chief Operating Officer  
 COS Chief of Staff  
 GM General Manager  
 LRM Labor Relations Manager  
 PM Project Manager  
 SSM System Safety Manager

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Project: safetyplan Date: Wed 12/2/98	Task		Rolled Up Task		Project Summary	
	Progress		Rolled Up Milestone		Split	.....
	Milestone		Rolled Up Progress		Rolled Up Split	.....
	Summary		External Tasks			