Y2K—A Regulatory Response

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Abstract

Everyone has heard or read about the Year 2000 (Y2K) problem that refers to the potential for date-reliant electronic systems to fail because they were not designed to read four digits. In the insurance industry, the importance is particularly acute because the contracted product is delivered in the future, crossing date lines. Regulators across the country and throughout the world are confronted with monitoring the level of preparedness of their constituency for the Y2K. Like insurance companies, insurance regulators have a more difficult task because of the complexities and forms of insurance and reinsurance, as well as the industry's heavy reliance on business partners and vendors.

Insurance companies must have planned adequately and provided for their internal systems, such as claims processing and accounting, to be Y2K compliant. They also must have checked their external vendors, service providers and other business partners to be sure that those companies will be ready. For the property and casualty segment of the industry, regulators must ensure that insurers have assessed their potential liability for exposure under policies issued and addressed liquidity issues if their investment markets are temporarily halted.

Because there is no precedence, little reliable data is available on the cost of correcting the Y2K problem or the potential impact on the solvency of individual insurance companies or of the industry.

This paper will discuss the efforts by the Texas Department of Insurance (TDI) to assess the Y2K problem and to provide an appropriate regulatory response. The paper also reviews the material factors that bear on the Y2K issue and concludes with recommendations to the industry, as well as provide insights into the future direction of the response to the Y2K challenge.

Y2K – A Regulatory Response

Introduction

Clearly, the early designers of computer coding had no idea that their decision to use two digits instead of four to describe a year in a date would have such a material impact. These computer code pioneers made their decision for economic reasons when the price of a megabyte of memory was approximately one thousand more than today's cost. They likely assumed a much earlier replacement of the coding conventions and did not envision today's widespread use of computer applications in every facet of life.

Today an insurance company's decision to (1) re-code information systems with updated four-digit versions, (2) replace systems, or (3) do nothing may determine the survival of the company itself. The costs of assessment, remediation and testing are high. The result of doing nothing, or not enough, may mean policyholders are unable to get policy service, or worse, unable to collect on their policies at a time of need

Fundamentally, insurance regulators want to be sure that all insurers can accurately underwrite and issue policies, collect premiums, process and pay claims, as well as account and report for all of their functions, in a Y2K environment. Regulators must assess company systems, the business partners of insurers, and understand the Y2K impact resulting from litigation, legislation, property and liability exposure, and modification to reinsurance. For example, it will be necessary to take a fresh look at the semantics associated with the word "fortuitous" since it will play a major role in deciding whether losses are covered.

Texas statutes relating to examination and rehabilitation authority provide the basis for the Department of Insurance to assess the preparedness of the insurance industry operating in Texas. These statutes provide the authority to take action if company management fails to prepare for Y2K.

The Department's approach toward assessing the Y2K preparedness of the insurance industry began with a mandatory examination survey of approximately 3,400 insurers and insurance-related entities. The Department used resources from many disciplines, including information systems specialists, examiners, analysts, actuaries, attorneys, rate and form technicians and planners for both the survey design and the analysis of survey results. Because staff and financial resources are limited, the Department is using outside consultants to collect survey data, to evaluate plans, and to assist company management in correcting system problems.

Based on survey results and financial indicators, each company was confidentially scored. That provided a starting point to further assess their Y2K preparedness. Most companies demonstrated that their Y2K planning was sound and/or the lines of business they wrote were of minor concern, and, therefore, no further action was necessary.

However, responses from more than 1000 companies raised concerns and prompted additional attention.

While the survey was designed to determine Y2K systems compliance, it also was designed to gain an understanding of each company's underwriting exposure. The emphasis of this paper will be on that exposure, delving into the Y2K insurance risk within the commercial property and casualty industry.

As of this writing, a great deal continues to evolve. The background provided here will, hopefully, help those who have yet to be directly involved in Y2K preparation to better understand their role as the new year approaches.

Part 1 – Insurance Coverage Considerations

Insurance and coverage issues need to be evaluated their impact estimated. The questions include the determination of coverage based on policy language and the classes of business written with Y2K exposures that generate serious claims. The actuary will have a very useful role in the preliminary and ongoing Y2K analysis to estimate the frequency and severity of these potential claims.

Policy Triggers

Disputes already have arisen in the computer hardware and software industry over which policies provide coverage. Most insurers argue that the policy in force when the damage actually occurred should be responsible for payment. This has led some experts to suggest that the triggering for the Y2K coverage and occurrence will be the same trigger as used in asbestos and pollution coverage cases; the manifestation and exposure trigger. This issue will likely be determined early in the process and have a significant impact in determining what is and what is not insured and who is responsible.

Initial Commercial Property and Personal Injury Losses

The initial Y2K losses and claims will largely entail first-party property. Such claims may be extensive if an automated maintenance system fails and machinery shuts down. Part of the worldwide power grid could conceivably shut down, resulting in property loss to equipment such as high-temperature and high-pressure applications, life and safety systems, medical surveillance and monitoring equipment and security systems.

A second tier of claims will be for business interruption. While there will be claims for shutdowns, there also will be claims for business slowdowns, where the volume of work that normally runs through the insured system is diminished as a result of a Y2K problem.

Current industry thinking is that business interruption policies may provide little coverage for Y2K because such policies are written on a "named" peril basis. It is highly unlikely that Y2K will be added to the list of such perils. Even if primary insurers

wanted to, their reinsurers may balk, regardless of premium. Even with an "all-risk" policy, most forms state that business interruption must arise out of direct physical loss to covered property and must be fortuitous. These defenses for claim denial are likely to be tested in court, producing another element of uncertainty as well as associated defense costs.

Examples of business interruption situations include those businesses that depend on vendors and suppliers that may be highly mechanized, such as banks that process checks, and retail stores that rely on credit card verification systems. The power industry is heavily dependent on computers with embedded systems and date sensitive programs that may result in an inability to provide customers with electricity and may result in significant loss of income.

Several major insurers have reviewed every Standard Industrial Code (SIC) for Y2K exposure, ranking them accordingly. Major classes ranked for property or business income loss potential include:

- Energy companies
- Security systems and companies
- Utilities
- Transportation (particularly aviation)
- Health care
- Financial services industries
- Governments

The oil and gas industry faces problems because of its dependency on highly sophisticated, computer-controlled data gathering for oil and gas exploration. Data can be corrupted, rendering faulty analysis, and emergency systems can cut down pipeline flow.

The airlines face service interruptions because of the embedded chips that can shut down equipment for automated maintenance checks.

Health care is also a concern because of embedded chips that depend on timing devices to keep functioning. The most commonly mentioned example is pacemakers.

The financial services industries that focus on managing assets and liabilities will face personal injury exposure because of invasions of privacy, security breakdowns and on-premise injuries at ATMs and branch locations.

The emergency response industry (police, fire and medical) faces the prospect that many alarms will go off at once, triggering an overflow of calls, preventing real emergencies from being timely addressed.

Once these losses have occurred, the question turns to who is liable. The process of affixing the responsibility will likely continue for years to come. Regulators, as well as

company managements, will need the related loss data for years to come. Actuaries will be called upon to estimate and re-estimate ultimate loss and loss adjustment costs in much the same way environmental losses are estimated today.

General Liability Issues

The general liability questions center on coverage issues, including the definition of occurrence and product liability coverage. Management liability policies will center on errors and omissions (E&O) coverage and directors and officers (D&O) coverage.

General liability insurance provides third party coverage for property damage, bodily injury and personal injury not "expected or intended" by the insured. Property damage to the insured's own property or damage to products of the insured, is typically excluded if caused by a deficiency in the insured's work. For that reason, many Y2K claims may not involve that third party aspect. Those that do will have to stand up to the rigor of being unexpected or unintended. Further complications will arise as downstream causes and effects are considered in determining fault.

Another special concern may be ERISA claims. Fiduciaries have responsibility for payment of benefits and the administration of employment benefit plans. To the extent Y2K issues result in improper funding or payments, there may be a cause for legal action.

Premises Operations and Product Liability

A large number of classes have been identified in the manufacturing and service industries as having exposure to Y2K problems. The classes that made most lists include:

- Computer or peripheral equipment
- Drug stores
- Financial services (including stockbrokers)
- Sales, service or consulting organizations
- Ticket agencies
- Agriculture

All manufacturing companies will have some element of exposure, but those most affected will likely be in the computer industry. Manufacturers who produce embedded chips and microprocessors that failed may face a myriad of product liability claims.

The health industry depends on computers to help dispense medicines properly. Because of the large number of software packages used for this purpose, it appears inevitable that some portion of the industry will have to deal with drugs dispensed at the wrong times.

To the extent the financial services industry cannot transfer funds properly, losses will occur.

Sales and service industries will be looked upon to fill coverage gaps because they sold or used the equipment with flawed embedded chips. While in most cases this may stretch the coverage definitions, there will be a duty to defend.

Even ticket agencies may produce tickets with incorrect dates.

Agriculture will be affected because of automated feeding systems, automated crop irrigation systems and cold storage warehouses.

One coverage issue facing all industries will be data corruption or losses. Disputes will likely arise over whether data, currently considered an intangible, can be considered tangible property that can be damaged. Case law provides that property on magnetic tapes, not yet printed, is considered tangible property. There is conflicting case law, however, that data in circuits and wires are not yet tangible. As a result, many industry experts believe that more litigation will arise to decide these issues.

There also may be claims for corollary damage, even in cases where primary physical damage and bodily injury coverage does not exist. For example, fire damage to adjoining properties where the primary fire is not covered may trigger a liability claim.

Errors and Omissions

Errors and Omissions (E&O) insurance generally provides coverage for claims alleging errors and omissions by the insured parties with respect to named professional services they provide. Most industry experts expect many "you didn't tell me we didn't have coverage" allegations to trigger error and omissions claims. Computer professionals likely will seek coverage under their E&O policies for Y2K issues. This coverage will be particularly important for computer professionals offering services to make businesses Y2K compliant.

Even if no written contract exists, one may allege that reliance on an implied promise of performance was breached. For example a consulting actuarial firm, with responsibility to deliver regular quarterly reserve analyses, cannot deliver because of an internal system failure could face an alleged breach of the "covenant of good faith and fair dealing" implicit in every contract. These lawsuits can take the form of contract claims as well as professional E&O claims.

If a company decides to correct licensed software from a vendor, copyright infringement could occur. Software is normally licensed in such a manner that the vendors retain the copyright. Those licenses usually limit the actions the licensee can take with respect to the software. Therefore modifications without required consent could result in a claim by the licensing vendor against the licensee.

E&O specialists are attempting to limit exposure by introducing exclusionary endorsements, a strategy that could backfire if other defenses are limited as a result.

Directors and Officers

Directors and officers (D&O) liability insurance covers claims against corporate directors and officers for "wrongful acts." Many policies also cover securities claims made directly against the corporation. Such policies only cover claims made during the policy term.

D&O was not intended for the Y2K exposure, given the frequency and severity of these potential claims. As a result, D&O will be another source of litigation. To the extent coverage or lack of coverage is communicated before the event, there is opportunity to avoid litigation. Companies specializing in D&O are attempting to manage the risk by communicating their policy in advance, or charging an extra premium for an expressed coverage endorsement. As one insurer put it, "silence is not golden."

The technology/computer industries will be most susceptible to D&O claims given their haste to develop competitive products, perceived lack of attention to the Y2K problem and failure to support earlier versions of their product. One such case is already being heard (Caplan vs.Symantec Corp). The plaintiff is alleging breach of implied warranty for earlier versions of the defendant's anti-virus software. The plaintiff is trying to get the company to upgrade all prior versions of the software at no charge.

Further Litigation Impacting Y2K Decisions

Currently, two legal actions could limit or expand liability for Y2K losses. Both cases seek to draw from previous product liability case law to limit liabilities arising out of Y2K.

One case is Kumho Tire Company vs. Carmichael. The industry has filed amicus briefs with the U.S. Supreme Court. The briefs urge that technical standards for the admissibility of expert testimony on Y2K lawsuits be the same as those used for expert scientific testimony in product liability cases. The basis for this position is set in the 1993 Daubert vs. Merrell Dow Pharmaceutical case where the Supreme Court imposed a number of restraints barring so called "junk science" from the courtroom in the litigation of an anti-nausea drug. This case law calls for federal judges to screen the reasoning and methodology of expert testimony before it can be heard, and also calls for this decision being made at the district court level rather than the appellate court level.

The other legal action is a Massachusetts case in which Arthur Anderson is seeking a declaratory judgment that it should not be liable for the cost of replacing a computer installed in 1989 at a customer site that was not Y2K compliant. Anderson's arguments center on the so-called state-of-the-art defense, i.e. if a defendant can show that it provided goods and services in accordance with the scientific knowledge available at the time of delivery, then the defendant complied with government or industry standards and is therefore not liable.

These cases are extremely important because they give courts an opportunity to define the boundaries of legal actions that can be taken in the wake of Y2K computer losses.

Future litigation also may arise between insurers and their reinsurers as they try to mediate coverage disputes between policyholders and their insurers. Some insurers may try to treat all of their Y2K claims as a single event so they incur only one retention before reinsurance coverage is triggered. Reinsurers, however, may fight this approach if the claims presented as a single event are not related.

In fact, the actual indemnity cost may pale in comparison to the legal costs of litigating Y2K coverage issues. One consulting group estimates that as much as $1 trillion will be spent to litigate Y2K problems.

Non – System Internal Issues

Two additional issues that will impact the financial well being of an insurer are (1) reinsurance negotiations in 1999 with the primary company and (2) asset and liquidity problems.

Reinsurance

As a result of uncertainties associated with Y2K coverages, the 1999 reinsurance renewal season may go a little slower then normal. Most reinsurers will likely look carefully at each company they underwrite to be sure its doing a good job in underwriting its own book of business. In addition, insurers will seek clarification on whether an occurrence, such as Y2K, can be considered as one event. Regardless of an insurer's approach to Y2K claims, they have a duty to defend suits against policyholders. That cost can be high, and the issue will be subject to continuous evaluation.

The larger reinsurers already have surveyed their larger clients regarding Y2K exposure. Most will follow the fortunes of their clients. There are notable exceptions where the company has high concentrations in lines where severity and frequency of claims are expected to be high. One insurer seeing an opportunity wanted to market a Y2K policy. After being rebuked by its lead reinsurer, the company decided to back off.

Asset and Liquidity Issues

Today's investment markets are so intertwined globally that an unprepared third world market could upset the whole trading network. To a lesser extent, individual bank transactions could tie up cash flow and it may become necessary to convert assets to keep the liquidity to pay claims timely. Insurers need to be aware of potential cash flow problems and plan accordingly. Insurers also are concerned about agents' balances. Some even contemplate increased use of lock-boxes for their producers.

Given the extent and potential of the Y2K phenomenon, it is obvious why the public sector is so interested in the steps being taken to minimize economic loss

Part 2 – The Department's Approach to Assessing the Y2K Preparedness of the Insurance Industry Operating in Texas

The Department developed its own business plan for analysis and responding to the preparedness of the insurance industry operating in Texas. It involved surveying all insurance entities operating in Texas, assessing the results and taking action on those entities that have failed to plan or prepare adequately for Y2K.

The Department hired the University of North Texas to collect the data and to merge the survey results with each company's financial data. A separate Analysis Task Force scored companies based on survey results and financial strength. As regulators, it is necessary to assess the loss potential for those companies that provide coverage for bodily injury and property damage. A similar assessment was done for third party liability exposure, particularly corporate officers and directors liability for acts or failures to act on the corporation's behalf, and errors and omissions for professionals providing Y2K services.

The process of conducting a Y2K assessment was complicated by the fact that systems may pre-date current company, resulting in awareness problems. Also, little or no actuarial data is available on possible exposure for damages covered by general liability, officers and directors and errors and omissions policies is available. What data there were still resulted in highly speculative estimates.

During this phase, Department staff sought more Y2K information through seminars, articles, vendor presentations and talking with large insurers about their Y2K efforts. Through this process, the Department began to identify potential resources for remediating systems or reinsuring companies that might be placed under regulatory control for lack of Y2K compliance.

The Survey

In early 1997, the Department became increasingly aware that some insurance entities might not be adequately preparing for the change in the millennium. Because no information database existed to examine the problem or its potential, a detailed forty-four question, multi-part survey was designed and administered as a special examination to almost 3,400 licensed insurance entities. The survey was designed to:

- assess the company's internal systems, such as claims processing and accounting.
- identify each companies reliance in external vendors or service providers and the extent to which due diligence had been conducted by these entities.
- determine the potential exposure for liabilities under policies issued for the property and casualty sector of the industry.

The survey was mailed in November, 1997. It was sent to individual companies rather than company groups because of a concern that companies within groups could have independent systems – particularly in today's merger/acquisition environment, and the Department's authority is at the company level, not the group level.

While the survey was directed to all companies doing business in Texas, the emphasis of this analysis will be on the P&C companies. A copy of the survey is attached as Appendix 1.

The Systems Risk

Most insurers are computer dependent for policy entry, as well as claims coverage and settlement functions. Policy and claims systems can be as much as 30 years old and written in archaic computer languages, while others are state-of-the-art systems. Most are somewhere in-between.

A goal of the survey was to have each company identify its level of preparedness. To that end, questions were asked regarding platforms, software development and maintenance systems and, if applicable, service providers and other business partners.

The Insured Exposure Risk

The interest of the regulator is similar to that of an insurer. Both need to know if claims arising from Y2K, perhaps never anticipated in the underlying rates of the policies, could impair the insurer's financial well being and its ability to make future claims payments. While recognizing it was not possible to identify the specific sources of exposure within a company, general questions were asked regarding current premium writings and policies in force by line and, in the case of commercial P&C business, classes of business written.

The survey went further by including an actuarial estimate section to quantify Y2K risk. Without historical data, such estimates were likely to be no more than informed judgements, but such estimates could have provided some basis for determining possible Y2K losses if patterns emerged.

Setup of the Survey

The 7-page survey helped profile the company by asking for the current policies-in-force count and the premium percentage breakdown by major line. For P&C companies that write commercial lines, additional classification information was required. A second set of questions explored each company's commitment to addressing the Y2K problem, while a third section addressed system readiness. The fourth section questioned the extent the company had checked the Y2K status of producers, reinsurers and service providers. The fifth section questioned the type of exposures being written and what was being done to protect the company from the potential liability of existing contracts. The last section addressed the actuarial and accounting issues, particularly regarding extraordinary reserve adjustments.

The Responses

The response rate was 90 percent (92 percent for P&C companies). The survey was mandatory for all, so the other 10 percent were dealt with separately and not included in

the data discussed here. The quality of responses was satisfactory in that most of the companies filled out the survey in full.

Response Rates by Company Type

Class Code	Total in Database	Responses	Response Rate
Fraternal	36	35	97%
Life & Health	868	810	93%
Multiple Welfare	9	7	78%
Property/Casualty	1049	965	92%
Specialty	1397	1193	85%
Title	24	22	92%
Total	3383	3032	90%

The NAIC database provided each company's financial information.

Initial Analysis of Systems Readiness

The first analysis of the data revealed that 23.0 percent of the insurance companies had a Y2K plan, but not written; 3.3 percent did not yet have a plan; and 5.4 percent did not feel they needed to address the issue. The remaining 68.3 percent had written plans.

Regarding the readiness of companies the respondents reported as follows:

- 7.5% will be 100% prepared by 12/31/97,
- 59.7% will be 100% prepared by 12/31/98,
- 96.5% will be 100% prepared by 12/31/99.

Regarding the question of how the company would become Y2K compliant, the survey showed that companies were using a variety of methods to get ready:

- 68.6% of the companies anticipated using external consultants,
- 57.8% were replacing hardware,
- 61.1% were replacing operating systems,
- 70.3% were replacing application software,
- 80.4% were fixing application software.

More than 50 percent of the companies had no backup plan in case their Y2K efforts failed. Of those with backup plans, more than 50 percent involved manual policy processing.

More than 97 percent of the companies reported that financing for planning, execution, testing and maintenance would come from their current operating budgets.

More than 29 percent of the companies reported they did not include a provision for running software previously archived after 1/1/2000.

Systems testing questions showed that 44.0 percent of the companies were testing in a computer environment configured and operated as if it were after 12/31/99. Of the companies that had done testing approximately 50 percent had produced accurate results.

The following chart reflects the progress of companies planning to remediate their application software at the time of the survey.

Compliance Activities				
	Not Started	In Progress	Complete	Total
Plan Preparation	1.5%	32.9%	65.6%	100.0%
Execution	6.9%	82.7%	10.4%	100.0%
Testing	19.9%	73.8%	6.3%	100.0%
Maintaining	32.1%	61.1%	6.8%	100.0%

The Initial Scoring System

To begin the process of separating companies, a scoring system was developed by the Y2K Task Force, in conjunction with the Research Group, based on the survey results. Each company received a unique score that enabled the regulatory response to begin on a somewhat prioritized basis.

Four main risk factor groups were developed. The risk factors considered were:

- Systems/operations, regarding an entity's systems readiness,
- Insurance/claims, regarding how well an entity is prepared to deal with impacts of Y2K on its policyholders,
- Financial stability, based on financial information available to the Department; and exposure in risky lines, based on a property/casualty insurer's premiums for product liability, other liability, commercial multi-peril and boiler and machinery,
- Level of exposure to Texas policyholders, with efforts focused primarily on companies with material writings in Texas.

Risk Factor 1 – Systems Operation

Companies without a written plan immediately went into a special category for further research.

Other considerations in Risk Factor 1 were:

- Interim dates toward compliance,
- Backup plans if systems fail,

- Budget for Y2K,
- Source of funds to pay for Y2K preparedness,
- Leap year readiness,
- Level of testing at the time of the survey,
- Simulation testing.

The results were used as an internal sorting tool to determine the companies to investigate further.

Risk Factor 2 – Insurance Exposure

Points were assigned based on the responses to survey questions 2, 32-34, 38-41, 49. The determining factors used to score exposure were:

- distribution by line,
- strategic business planning by line,
- use of Y2K exclusions,
- assessment of potential liability.

Once again the scoring system could not identify the companies with exposure, but could identify potential areas for further investigation.

Risk Factor 3 – Financial Stability

The Department assesses the financial stability of each company. This confidential information was the basis for Risk Factor 3.

Risk Factor 4 – Texas Exposure

Texas premium volume was used as the basis for Risk Factor 4, with companies writing over $35 million receiving the highest risk assessment. The purpose was to add an economic impact measure to the scoring.

Once the scoring took place, the results were sorted and ranked in various ways. These results, plus further discussions with staff analysts and the companies themselves dictated the level of initial regulatory attention given to a company.

Analysis of the Actuarial Responses

The survey concluded by asking about reserve adjustments being made as a result of anticipated Y2K claims. The few companies that reported these adjustments had no real support for their estimates and admitted that they were educated guesses based on limited knowledge of the exposure. The only pattern that emerged from the survey was that no estimates were possible.

However a corollary purpose was served to alert the P&C actuarial community to the Y2K situation. The actuary will be expected to make estimates of ultimate losses very early after the new year. Data will be immature and non-traditional methods will have to be used to make the evaluations. Several of the larger companies have indicated that they intend to employ methods similar to those used to estimate environmental liabilities. Until patterns emerge it appears frequency and severity estimates will be the best way to approach the problem.

Part 3 – Regulatory Action

The examination survey was the initial step in the Department's evaluation of the readiness of the insurance industry. Under its statutory authority, the Department then developed a strategy to respond to the Y2K challenge.

Use of Survey Results

Once the results of the survey were tabulated, the Task Force categorized companies in the following ways. Those companies that:

- did not responding to the survey,
- responded to the survey but indicated they did not have a written Y2K plan,
- responded to the survey but had responses indicating high-risk based on the Task Force's scoring system;
- responded to the survey and had responses indicating low-risk based on the Task Force's scoring system.

Non-Respondents

Companies that did not respond to the survey were presumed to be unprepared, and considered top priority because of the limited time to develop and implement a plan before the millennium change. The Department's regulatory response to these companies is described below, followed by discussions of the Department's regulatory response to those companies having Y2K plans and considered either high-risk or low-risk.

At any time, companies could move from one category to another, and the Department built in flexibility to allow for this movement. For example, some companies not responding to the initial survey or follow-up requests did provide a survey response in the Department's analysis phase, and these were entered into the system accordingly.

Companies were identified either as non-group or as part of a group of companies. If a company was part of a group of otherwise responding companies, analysis staff checked responses from the group as a whole to identify possible mis-routing of mail or other errors that could account for a single company in the group not responding. In the event of such an error, company management was offered the opportunity to send a completed survey to the Department, and the survey response was subjected to the same scoring process as original responses.

The first regulatory actions taken by the Department as a result of the survey were management conferences with non-group, actively writing insurance companies that did not respond to the survey. This was a relatively small number of companies. The conferences yielded a variety of findings, ranging from companies that were fully implementing a feasible and timely written plan to those that had no written plan at all. The first of these management conferences was held with a company at the latter end of the range, i.e., management did not have a written plan and timeline for becoming Y2K compliant. The Department moved quickly to place the company under administrative oversight to assist the company toward developing, evaluating and implementing a plan to become Y2K compliant.

By early design, the Department's approach to assessing the preparedness of the industry in Texas is evolving and flexible. As an example, Department staff learned from these initial management conferences that Department and company resources could be conserved by more in-depth initial conference calls with company management. Information gleaned from these calls determined the next course of Department action, which could include a request for a management conference, a request for a written Y2K plan, an onsite examination, or regulatory intervention. The Department has undertaken this approach for the remaining non-responding insurance companies which are those in a group for which no company in the group responded.

Respondents with No Written Y2K Plan

The Department considered the lack of a business plan to address Y2K as a reliable indicator that future examination was required. For the more than 1,250 companies that responded to the initial survey that they did not have a written plan, the Department sent follow-up letters asking company management to develop and provide a written plan. These letters included the specified required format for a plan, with general categories of the company's self-assessment, environmental assessment, mission-critical systems assessment, and specific details for each assessment category.

Companies indicating that they did not have a written plan were grouped for further analysis. Outside consultants were used to assist in this analysis and followed a standard Department procedure so as to assist in the evaluation of the more than 1,250 plans that were in this category. Companies were then prioritized based on evaluations of these plans and based on the type of company. Again, Department action regarding any company considered at high risk based on its written plan includes a request for a management conference, an onsite examination, or regulatory intervention such as administrative oversight or supervision.

Respondents Considered as High Risk based on Survey Response

The regulatory response toward insurers and other entities considered as high risk because of their survey responses is consistent with the regulatory response toward non-respondents and respondents with no written plan. This response also is consistent with the Commissioner's statutory authority. Department action may include a request for management conference, an onsite examination, or regulatory intervention such as

administrative oversight, supervision, or conservation under the direction of the Department's Conservator. These companies were prioritized on an economic impact basis. Wide use was made of the expertise in the Department regarding various companies, particularly the knowledge of the financial analysts and the examiners. Based on that prioritization, a number of company management teams have been invited to the Department for a conference regarding their Y2K status.

Respondents Considered as Low Risk based on Survey Response

The Department considers a company's management responsible for it's continued operations. If management's response to the survey indicated that the company was well prepared in regard to internal systems, external reliance, and policyholder protection, the Department does not anticipate further action, unless subsequent information becomes available that would indicate otherwise.

Going one step further, the Department examined many of the Y2K-ready larger companies to determine what the prudent insurance company should be doing to prepare for Y2K. These companies were very cooperative, and the following section is a compendium of what was learned in this review.

Part 4 – The Prudent Insurance Company

The research done to date has made it evident what prudent insurance companies should have done by now and what they need to do over the course of 1999. Presented in outline form, the hope is that this compilation will help in every company's self-assessment.

1. The company should appoint a Y2K coordinator.
2. A management team should be formed around the coordinator and meet regularly. The team should include as many disciplines as possible.
   - **Information Services** should have examined and corrected the company's own systems and be well into the testing phase. So they can understand all issues and communicate their timetables, particularly for integrated and simulation testing, they need to be part of any management group. They also need to be aware of special data needs.
   - **Underwriting and loss control** should identify Y2K exposure and advise the production force and policyholders of Y2K compliance issues.
   - **Legal** should pass on Y2K forms and endorsements and to work with Claims to identify and define what constitutes a Y2K claim.
   - **Claims** should develop a strategy and special training that will be necessary to identify and deal with Y2K claims. Most large companies are centralizing the handling of all Y2K liability claims because of their special nature and to assure a consistent approach.
   - **Financial and Accounting** should help management assess the cost of Y2K compliance and identify the balance sheet impact as claims are made.
   - **Actuarial** should have the background to determine ultimate losses, not only indemnity claims but also defense costs early in the process. As soon as Y2K

hits, management and regulators will want to know the financial impact of Y2K. To this end the actuary will need to have databases set up to identify Y2K claims in sufficient detail to make this assessment.

3. The management team should certify that agents and producers are compliant, as well as other key suppliers and customers' systems.
4. After plans and time lines are developed, the company should create an audit trail regarding the status of those plans. This may be very important if there are failures down the road.
5. The company should identify exposure to third party claims and determine if it is feasible to try and limit that exposure.
6. Management should determine what information needs to be reported to their Board of Directors regarding internal compliance as well as potential outside exposure.
7. Company managers should monitor what competitors are doing to become Y2K compliant.
8. Management should evaluate Y2K compliance as part of any merger/acquisition activity in which the company is engaging.
9. Contingency planning at all phases of Y2K should be developed in case remediation efforts fall short of expectations.

Conclusions and Future Direction

The overall regulatory objective is for every insurance entity to have its information systems ready. Regulators want to make sure that companies can continue to pay claims, accept premiums and issue policies. Also companies need to be sure that they can continue to pay providers and beneficiaries and report financial and statistical information to organizations that require the information. All insurers face these issues.

All firms will be have a certain duty of care to assure that they are Y2K compliant. As failures occur and liability can be alleged, property and casualty insurers will be exposed to claims under contract liability, errors and omissions and directors and officers policies. It is important for every insurer to know and understand the issues in advance to assure timely disposition of claims.

Cooperation and understanding on the part of everyone in the industry is required to maximize the effectiveness of Y2K efforts. The Department continues to be fully engaged in reviewing and responding to Y2K compliance and have committed significant resources to evaluate and help remediate companies in need of extra help. This challenge adds considerable layers of complexity to the already complex regulatory workload. To the extent necessary, staff has been augmented with outside experts. The Department is prepared to seek reinsurance for smaller books of business written by companies that have either lost their reinsurance coverage or have failed to underwrite their business to the satisfaction of their reinsurer

Y2K considerations may speed company consolidations and may cause serious strains on capital. While not suggesting an Armageddon type situation, the industry may find that cash flow to handle worst case scenarios is a problem because of the volume of claims reported in a very short time frame.

As the clock ticks, Y2K preparedness will become ever more critical, and due diligence will be the catchword for the industry. Insurers that are well prepared going into the 1999 policy renewal year are probably going to be fine. Those that are "in denial," however, may find themselves hit with a number of impacts such as exclusions by their reinsurers who could cause regulators to effect a run-off situation, or find a way to reinsure or merge a book of business. Timing is critical. By now, Y2K awareness has reached the height where there is no excuse for not having addressed the problem. The question remains: has it been addressed enough?

The problem is serious enough that federal legislation is being considered to provide companies that disclose Y2K remediation efforts with protection against lawsuits based on the fact that they have shared information. In addition, legislative bills are being considered to limit the liability for computer date failures. Only damages related to bodily injuries, costs reasonably incurred by claimants to reprogram or replace computer systems, and damages suffered through a breach of excess warranties would be recoverable.

In the end, regulators may be confronted with the possibility of companies incurring very high Y2K losses compared to relatively thin surplus levels. The effects of these losses will be felt well beyond the year 2000 and regulators will need to collect and analyze data regarding the frequency and severity of Y2K losses. To that end, regulators may be well served to include data reporting requirements in the Annual statement blank for the year 2000 and beyond.

Clearly, Y2K is a global problem, touching every aspect of the world economy. The insurance industry and the regulatory community must continue to act in full cooperation as we approach the millennium change.

Appendix 1

Company Profile

C P 1. How many in-force policies does your company have? Inside Texas _____

Outside Texas _____

C P 2. What is the breakdown of your policy distribution in terms of premium volume? (If your company is a *non-insurer*, answer in terms of *policies processed.*)

	Percentage of Distribution
Insurance Products	
Product liability	_____ %
Professional liability (including directors & officers, errors & omissions)	_____ %
All other commercial liability (including umbrella and commercial auto)	_____ %
Personal auto liability	_____ %
Personal property	_____ %
Business interruption	_____ %
Commercial fire and allied	_____ %
Other non-commercial liability	_____ %
Life annuity insurance	_____ %
Health and accident (including HMO, group health, etc.)	_____ %
Disability	_____ %
Title insurance	_____ %
Other _____	_____ %
Total	100%

C P 3. Give us a breakdown of the businesses you insure (based on the number of policies) as of 9/30/97.

	0%	1 to 25%	26 to 50%	51 to 75%	76 to 100%
Agricultural	☐1	☐2	☐3	☐4	☐5
Mining	☐1	☐2	☐3	☐4	☐5
Construction	☐1	☐2	☐3	☐4	☐5
Manufacturing	☐1	☐2	☐3	☐4	☐5
Transportation	☐1	☐2	☐3	☐4	☐5

Finance	☐1	☐2	☐3	☐4	☐5
Health care related	☐1	☐2	☐3	☐4	☐5
Education	☐1	☐2	☐3	☐4	☐5
Retail	☐1	☐2	☐3	☐4	☐5
Professional services	☐1	☐2	☐3	☐4	☐5
Other services	☐1	☐2	☐3	☐4	☐5
Other	☐1	☐2	☐3	☐4	☐5

Planning and Budgeting For Year 2000 Compliance

"Year 2000" refers to the problem that automated systems could encounter on January 1, 2000. Computer systems that use a two-digit year may incorrectly register the year 2000 as "00." This could adversely affect numerous computer calculations and transactions that are date sensitive.

The definition of Year 2000 compliance has been heavily debated. For the purposes of this exam, Year 2000 compliance means that 20th and 21st Century date values will be processed correctly and that date-dependent calculations will produce accurate results.

C P 4. Does your company have an initiative to address Year 2000 issues?

- ☐1 Yes, a written plan
- ☐2 Yes, an unwritten plan only
- ☐3 Not Yet (skip to question 6)
- ☐4 Do not intend to address the issue (skip to question 24)

C P 5. (If yes to question 4) If your company has an initiative to address Year 2000 issues:

When was the plan adopted? _ _ / _ _ _ _ (month/year)

When will your systems be mostly compliant? _ _ / _ _ _ _ (month/year)

When is your project's anticipated completion date? _ _ / _ _ _ _ (month/year)

C P 6. Using an estimate, to what extent will your company be Year 2000 compliant by:

12/31/1997? _____ %

12/31/1998? _____ %

12/31/1999? _____ %

C P 7. How do you plan to become compliant? (check all that apply)

- ☐1 Using external consultants
- ☐2 Using internal staff
- ☐3 Replacing hardware
- ☐4 Replacing operating systems
- ☐5 Replacing application software
- ☐6 Fixing current application software
- ☐7 Not sure
- ☐8 Other _____

C P 8. Does your company have a plan to continue operations if it is not Year 2000 compliant by December 31, 1999, or if Year 2000 efforts fail?

Estimated Cost for One Year

☐1 Yes

☐1 Outsource processing outside of the affiliate group $ _____

☐2 Parent company will process $ _____

☐3 Manual processing $ _____

☐4 Merger $ _____

☐5 Sales of business $ _____

☐6 Dissolve/terminate business $ _____

☐7 Process at alternative site $ _____

☐8 Other _____ $ _____

☐2 No

C P 9. As of October 1997, what is the percentage of completeness in terms of labor hours spent?

_____ % (hours spent / budgeted hours)

C P 10. How much has or will your company budget for each phase of the Year 2000 project?

Total Number of Dedicated	Dollars	Labor Hrs	Full Time Equivalents
Plan preparation/identify problem		$ _____	_____
Plan execution/remediation	$ _____	_____	
Testing	$ _____	_____	
Maintaining Year 2000 compliance		$ _____	_____

C P 11. How will your company finance its Year 2000 project? (Numbers should add to 100% across)

Activity	Source of Funding					
Planning	☐1 Current funds____%	operating	☐2 Allocated/Reserved ____%	Surplus	☐3 ____%	Other
Execution	☐1 Current funds____%	operating	☐2 Allocated/Reserved ____%	Surplus	☐3 ____%	Other
Testing	☐1 Current funds____%	operating	☐2 Allocated/Reserved ____%	Surplus	☐3 ____%	Other
Maintenance	☐1 Current funds____%	operating	☐2 Allocated/Reserved ____%	Surplus	☐3 ____%	Other

C P 12. If you indicated "other" sources of funding for planning, execution, testing or maintenance, please describe those sources:

_____

C P 13. Approximately, how many lines of computer code does your company plan to change as part of the Year 2000 project? _____

Internal Preparation for Year 2000

C P 14. For your main line of business (based on premium revenue), provide the date you issued or plan to issue policies with expiration dates after 12/31/1999: __/___ (month/year)

C P 15. After 1/1/2000, does your Year 2000 plan provide a way to **access data** and **run software** that was previously archived (going back to at least 1/1/1995)?

Access data ☐1 Yes ☐2 No

Run software ☐1 Yes ☐2 No

C P 16. Does your Year 2000 project take into account that the year 2000 is a leap year?
☐1 Yes ☐2 No

C P 17. Have you tested your systems for activities which cross the year 2000 boundary?
☐1 Yes ☐2 No

C P 18. **If yes**, what did the tests show?

- ☐1 All systems produce accurate results
- ☐2 Most systems produce accurate results
- ☐3 A few systems produce accurate results
- ☐4 No systems produce accurate results

C P 19. When testing for Year 2000 compliance, what portion of testing occurs in a computer environment that is configured and operated as though it were after 12/31/1999? (i.e. on a machine that has a date at or beyond the year 2000) ☐1 All ☐2 Some ☐3 None

C P 20. What is the **format of your current**, most common year representation in your date definition? (Example: mm/dd/yyyy would be a four-digit representation)

☐1 four digits ☐3 two digits ☐5 1/2 byte of a date field to indicate century
☐2 three digits ☐4 one digit

C P 21. When compliant, what **will be the format** of your most common year representation in your date definition? (Example: mm/dd/yyyy would be a four-digit representation)

☐1 four digits ☐3 two digits ☐5 1/2 byte of a date field to indicate century
☐2 three digits ☐4 one digit

C P 22. When the Year 2000 project is complete, will your on-line screens display a 4-digit year?

☐1 All ☐2 Some ☐3 None

C P 23. If you plan to remediate your application software, which of the following compliance activities are in progress or have been conducted?

Not Started	In Progress	Complete	Phase
☐1	☐2	☐3	Plan preparation/identify problem
☐1	☐2	☐3	Plan execution/remediation
☐1	☐2	☐3	Testing
☐1	☐2	☐3	Maintaining Year 2000 compliance

C P 24. Please rank the most prevalent methods by which your company's information systems are maintained (with "1" being the most prevalent, "2" two being second most prevalent, etc.).

___ Internal IS department (staff)
___ Facilities manager/outsourced
___ Remote user (no in-house systems)
___ Other _____

C P 25. Which of the following core platforms does your company operate? (check all that apply)

☐1 IBM Mainframe computers

☐2 Non-IBM Mainframe computers (Please specify brand _____)

☐3 Mid-range computers (such as Sequent, Dec Alpha's, AS-400, SunSparc Station . . .)

☐4 Personal computers (PC's)

☐5 Client Server environment

☐6 None of the above

C P 26. What are the primary operating systems (such as DOS, VM, Unix, OS 400, Windows NT), database programs and application software programs involved in running the **premiums** and **claims** systems on your core platforms?

	Version	Vendor	Computer Platform 1 Mainframe 2 Mid-range 3 PC	System is Year 2000 Compliant	Access to source code
Operating Systems					
Premium System			☐1 MF ☐2 MR ☐3 PC	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Claims System			☐1 MF ☐2 MR ☐3 PC	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Application Software					
Premium System			☐1 MF ☐2 MR ☐3 PC	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Claims System			☐1 MF ☐2 MR ☐3 PC	☐1 Yes ☐2 No	☐1 Yes ☐2 No

C P 27. When considering all the premiums and claims application software in which you have access to source code, what is the source code distribution across all applications?

Language	Number of lines of code	Percent of total	Comments
COBOL			
RPG			
ALC			
C++			

Visual Basic			
PLI			
4GL (specify)			
Other (specify)			
Total		100%	

C P 28. Are your telephone systems Year 2000 compliant? ☐1 Yes ☐2 No

C P 29. Does your Year 2000 plan consider the impact of date sensitive embedded chips and the effect that failures in the chips can have on operations (i.e. HVAC, elevators, security systems)? ☐1 Yes ☐2 No

Business Partners

C P 30. Does the Year 2000 plan consider Year 2000 compliance of significant business partners?
☐1 Yes ☐2 No

C P 31. What portion of your contracts emphasize that business partners are Year 2000 compliant?
☐1 All ☐2 Some ☐3 None

P 32. ***What is the status of Year 2000 compliance for the following business partners? Does your company conduct electronic data transfers with any of the following? Have or will you test partners for compliance?***

Business Partner	How many of these partners are compliant?					Elec. Data Transfers	Testing for Compliance
Reinsurers	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Reinsurance intermediaries	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Asset managers	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Agents/producers	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No
MGAs / TPAs	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Affiliates (within same group)	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Service providers	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No

Information systems	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No
Telecommunications	☐1 All	☐2 Some	☐3 None	☐9 Know	Don't	☐1 Yes ☐2 No	☐1 Yes ☐2 No

Strategic Business Planning

C P 33. For each of the following lines, please estimate the **percentage of your current policies** in which the following conditions apply:

- Losses associated with the Year 2000 problem may be covered;
- Losses associated with the Year 2000 problem are specifically excluded;
- If significant claims associated with the Year 2000 problem are likely or unlikely.

Insurance Products	Losses associated with the Year 2000 problem may be covered					Losses associated with Year 2000 problem are specifically excluded					Likelihood of significant claims	
	0%	1 to 25%	26 to 50%	51 to 75%	76 to 100%	0%	1 to 25%	26 to 50%	51 to 75%	76 to 100%	Likely	Unlikely
Product liability	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2
Professional liability	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2
All other commercial liability	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2
Business interruption	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2
Other insurance products	☐1	☐2	☐3	☐4	☐5	☐1	☐2	☐3	☐4	☐5	☐1	☐2

C P 34. Does your company have plans to exclude Year 2000 coverage on future policies?

☐1 Yes (What type of policies? _____)

☐2 No

C P 35. (If yes to 34) What is the most common **effective date** of policies that will exclude Year 2000 coverage? (month/year) _ _ /_ _ _ _

C P 36. Will Year 2000 buy-back options (endorsements or riders to offer specific Year 2000 coverage) be available? ☐1 Yes ☐2 No

C P 37. Literature suggests that many Year 2000 problems will be caused by failures in date-sensitive embedded chip technology. Please provide a rough estimate of the **percentage of your current policyholders** that either manufacture, sell, service or use high-tech products with date-sensitive embedded microprocessors (percentages will most likely *not* add to 100%):

Manufacture _____% Sell _____% Service _____% Use _____%

Actuarial Estimates

In calculating answers for questions 38 through 42, have your actuaries consider the impact of your policyholders' Year 2000 non-compliance that may result in:

- Claims resulting from failures of embedded chip technology found in elevators, escalators, aircraft, home heating/cooling systems, home security systems, home appliances, automobiles, medical equipment, banking equipment, computers, telephone systems, etc.
- Business interruption claims
- Errors and omissions claims
- Product liability claims
- Claims against directors and officers
- Claims from exposure in use, sales, manufacture, and servicing of high-tech products

C P 38. Have you assessed the costs that your company may incur resulting from legal defense as a result of Year 2000 issues? ☐1 Yes ☐2 No

C P 39. **If yes**, how would you rate the impact of exposure upon your company's surplus?

☐1 Little or no impact ☐2 Some impact ☐3 Significant impact

C P 40. Have you made an assessment of the impact of business failures among non-compliant **policyholders** due to the Year 2000 problem? ☐1 Yes ☐2 No

C P 41. **If yes**, how would you rate the impact of policy holder business failure on your surplus?

☐1 Little or no impact ☐2 Some impact ☐3 Significant impact

C P 42. Estimate the maximum theoretical amount of loss for your company due to Year 2000 events:

$ _____

C P 43. What percentage of the amount in question 42 is reinsured outside your affiliate group? _____%

C P 44. What percentage of the theoretical loss amount in question 42 is in Texas? _____%

C P 45. In anticipation of potential claims resulting from Year 2000 events, will your company make adjustments to the following?

	1998 Budget Year		1999 Budget Year		2000 Budget Year	
	Adjustment	$ Amount	Adjustment	$ Amount	Adjustment	$ Amount
Surplus:	☐1 Increase ☐2 Decrease ☐3 No	$	☐1 Increase ☐2 Decrease ☐3 No change	$	☐1 Increase ☐2 Decrease ☐3 No	$

	change	_____		_____		change	_____
Reserves:	☐1 Increase ☐2 Decrease ☐3 No change	$ _____	☐1 Increase ☐2 Decrease ☐3 No change	$ _____		☐1 Increase ☐2 Decrease ☐3 No change	$ _____
Premiums:	☐1 Increase ☐2 Decrease ☐3 No change	$ _____	☐1 Increase ☐2 Decrease ☐3 No change	$ _____		☐1 Increase ☐2 Decrease ☐3 No change	$ _____