Aspiring Actuarial Leaders

The Modern Manager's Toolkit

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ACTEX Learning

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About The Author - Julia Lessing

Julia Lessing is a qualified actuary (FIAA) and Associated Certified Coach (ACC) based in Australia. After many years as an actuarial consultant and leader, Julia developed the Guardian Actuarial Leadership Program in 2021, to help actuaries make the transition from individual technical contributors to team managers. She has delivered the program to many cohorts of actuaries from various practice areas and countries around the world, with great feedback and success.

Julia has worked as a big four consultant in corporate actuarial roles as well as in the wider fields of public health and human services. She established and runs a boutique consulting firm, Guardian Actuarial, and has held actuarial educator roles for the Actuaries Institute and Macquarie University. She is an experienced counselor and an International Coaching Federation (ICF) credentialed coach, making her an unparalleled resource to support your career development.

Foreword

I have been a consulting actuary since the beginning of my professional career. The only thing I enjoy more than using data to solve problems is leading and developing teams to do the same. My love of leading teams was matched with rapid promotions into management roles before I had even qualified as an actuary.

Fast forward to the pandemic and, like many of us, all of my work had moved to Zoom. One of my corporate coaching clients asked if I ran any cross-company training where their new managers could learn new skills and network with their industry peers.

At the time I didn't run such a program, but I loved the idea! With a sudden drop in consulting work (thanks to Covid-19) I had time on my hands. I started talking to actuaries across the career continuum to understand their pain points, which suggested that many new actuarial managers struggled to delegate, communicate, and manage projects. Many of them lacked confidence to tackle the "difficult conversations" that were essential to good team morale and productivity. And, having been thrust into a situation of working from home and managing remote teams, many new actuarial managers found themselves burned out and disillusioned about their new roles.

Many actuaries told me they didn't want to invest time or money to complete further formal studies, and even if they did, there was nothing available that was tailored for actuaries to build the unique skills they needed to become confident and effective actuarial managers.

So in June 2021, the Guardian Actuarial Leadership Program was born! A cross-company, small group program run over 3 months to help actuaries build their management toolkits and confidence to step into their first people leadership roles. With the help of several experienced actuaries and industry leaders, who confirmed what new actuarial managers needed to learn, my husband (a qualified school teacher) then helped me convert these learning outcomes into a curriculum. I then built and curated learning materials to support this co-designed curriculum.

Many cohorts of high-performing actuarial managers have graduated from the program, and we have since built a sequel program to help actuaries step into their first senior leadership roles. With each cohort, I have sought feedback, improvement ideas, and testimonials to make sure the program continues to meet the needs of new actuarial managers. Thank you to actuaries who have completed the program and those who have contributed to its development since 2021.

When ACTEX approached me and we started discussing the idea of turning the Guardian Actuarial Leadership Program into a textbook, it seemed like the perfect way to improve access to this valuable content for actuaries around the globe. While a textbook is not a complete substitute for a small group program, we have endeavored to pack as much value from the program as we could into this book. I hope you find it valuable!

I would like to acknowledge the incredible support and encouragement that I have received from the ACTEX team, from Joana Amorim who planted the seed of the idea of a book, to Bill Marella's creative cross-continent publishing negotiations, and especially Yijia Liu who walked alongside me and formatted every chapter, made helpful suggestions, and transformed my ideas into reality.

I am also grateful for the following actuaries who allowed me to interview them for the Guardian Actuarial Leadership Program, and their interviews have been included in this version of the book:

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- Alan Hsu, FSA
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- Stephen Huppert, FIAA

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Introduction

As actuaries, we spend years learning the technical side of our profession: attending lectures, crunching numbers, writing assignments, and passing exams. But as our careers progress and we get promoted into our first management role, we realize that we need a whole new set of skills.

Actuarial managers need additional skills beyond technical expertise. While our actuarial training focuses on developing our abilities to produce high-quality technical work, actuarial managers need to supervise, delegate, and ensure the quality of work without doing it themselves. Actuarial managers also need to know how to adapt their management styles to different situations and personalities, support team well-being, and engage in strategic thinking.

You might have worked for one or you might be one, a new actuarial manager with an empty management toolkit and not enough support. It's lonely and exhausting! You might find yourself doing all the work, carrying all the stress, and running out of time to do a good job. Your team members start to disengage, you see your friends less often, and you start to wonder why you ever wanted the promotion.

But what if there were a way you could:

- Feel confident in your ability as a manager,

- Learn how to manage people and projects and effectively delegate work, and

- Fill your management toolkit with tangible, tried and true strategies?

Whether you're first learning about management skills or want to refresh your existing skills, this book can help you build your management toolkit to become a more confident and effective actuarial manager.

While the terms 'manager' and 'leader' may be used interchangeably, this book refers to 'managers' as individuals managing teams, tasks, and workflow. The term 'leader' refers to individuals displaying leadership traits, irrespective of their seniority or team management responsibilities.

Who Is This Book For?

This book is designed for high-performing actuarial team members who are transitioning from technical roles to managerial positions. It aims to equip readers with the necessary skills to manage teams, projects, and their own professional development.

You may be working through this book on your own, or it might be the text for your leadership training program. In either way, I hope that, like many actuaries before you, the content and activities in this book will be a valuable resource to help you build your management confidence and toolkit, so you can accelerate your actuarial career.

Introducing the House of Great Actuarial Managers

Consultation with actuaries across the career continuum and industry feedback showed that there are several areas where new actuarial managers need to develop their communication and leadership skills to be effective.

Throughout this book, we have used the "House of Great Actuarial Managers" framework to guide you through your learning journey as you build your key foundations and core skills for success.

Great Managers Live Here

Meeting Organizational Objectives

Professional Development	High-quality Technical Actuarial Work	Planning And Delivering Projects	Working With People Outside Your Team	Personal Development
	Managing People And Teams	Managing Your Time	Strategic Thinking	

Supporting Optimum Well-being

Key Foundations

Great actuarial management requires four key foundations or pillars:

- **Meeting organizational objectives**: Management activities must align with and support the key objectives of the organization.

- **Professional development**: A focused plan and effort are essential to develop both technical and leadership skills.

- **Personal development**: Effective actuarial managers invest in personal development to provide balance and job satisfaction.

- **Supporting optimum well-being**: Management of self and stress are fundamental to leadership success and sustainability, improving your performance and setting a good example for your team.

Core Skills

Once the foundations are in place, great actuarial managers develop skills across the following core areas:

- **Managing people and teams**: Understanding different personal styles, holding difficult conversations, fostering development of team members.

- **Planning and delivering projects**: Project planning, stakeholder engagement, monitoring progress.

- **Working with people outside your team**: Building relationships, networking, influencing others.

- **High-quality technical actuarial work**: Effective reviewing, ensuring high-quality work.

- **Managing your time**: Delegating effectively, managing personal time.

- **Big picture / strategic thinking**: Future planning, understanding how your team fits into the broader context.

Each chapter will explore the blue "foundations" and green "rooms" in more depth.

Learning Outcomes and Self-Assessment

Twenty learning outcomes underpin the content of this book, and they build sequentially throughout the next nine chapters.

Before you start reading, take a few minutes to assess yourself against each of these learning outcomes. You can take the quiz online or use the table in the Appendix.

The key learning outcomes as they map to each of the chapters include:

Chapter	House Topic	Primary Learning Outcomes
1	High-quality actuarial technical work	● I can supervise technical work and have processes to check and review to ensure high quality without completing it myself. ● I know how I would respond if a mistake was identified or a deadline is missed. ● I have my own tools and processes to identify and mitigate risks relating to my team and our work.
2	Managing people and teams (part 1)	● I know my preferred management style. ● I can adjust my management style for different situations and/or personalities. ● I understand differences in my own work styles and those of my team, and how to adapt to differences.
3	Supporting optimum well-being	● I can identify five elements, tools or activities that are key to sustaining my well-being.
4	Managing your time	● I can delegate work effectively. ● I have tried and true processes that I can use to manage my time and tasks. ● I can classify tasks based on their importance and urgency and can prioritize according to overall objectives.

Chapter	House Topic	Primary Learning Outcomes
5	Strategic thinking and meeting organizational objectives	• I know why strategic thinking is important as a manager and know my preferred way to make time for it. • I know my organization's objectives and know how to cascade them to my team members.
6	Managing people and teams (part 2)	• I can identify the different learning needs of my team members and feel confident in supporting their development. • I can use basic coaching skills to develop my team members.
7	Planning and delivering projects	• I have my own tools and processes to plan and monitor projects.
8	Working with people outside your team	• I can communicate in a variety of ways and can select the best style for a given scenario. • I feel confident to engage in difficult conversations when needed. • I can identify key relationships I need to build and I have strategies to do this.
9	Professional and personal development	• I know what professional skills I need to develop and what activities I will undertake to build them. • I can identify at least two current activities or hobbies that I enjoy, give me satisfaction or contribute to my personal growth that do not relate directly to my work.

Introducing the Coaching Model

Most actuaries are great at solo study. We spend hours poring through textbooks, reading study guides, working through practice problems, watching videos and constructing models to pass our actuarial exams. However, building management and leadership skills requires a different learning approach. If solo study was sufficient to build these skills, every actuary could quickly become an effective leader simply by reading books!

Instead, you will need to apply the theory and concepts that you learn throughout this book and practice your new skills until they feel natural and authentic to you.

We use the adult learning coaching model of "Learn > Apply > Reflect" throughout this book:
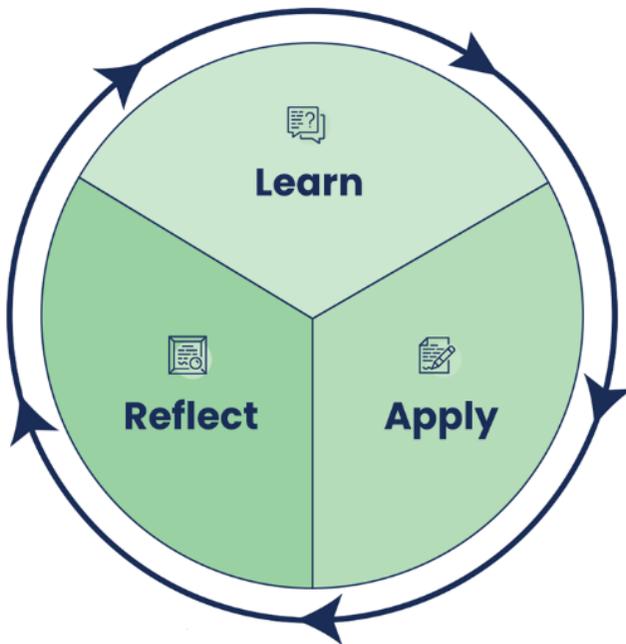
This learning model will help you develop your skills through a combination of theoretical knowledge and practical application. It emphasizes continual learning, self-assessment, and feedback to help you grow and succeed in your management role.

Each chapter will follow this cycle, starting with the theory and concepts for you to "Learn", followed by a section of activities for you to "Apply". There is also a section for you to "Reflect" on your application and see what further refinements you need to make in order to embed these skills and make them yours.

Introducing Our New Managers

Like our actuarial technical work, effective management involves skill and judgment and understanding of the context of each situation. As a new manager, you will have your strengths, weaknesses, and personal style that you will bring to your work.

To help illustrate management skills and concepts and to capture the range of possible approaches, you will follow two new managers throughout this book.

Meet Anne Actuary and Mark Manager:

Anne Actuary is a newly qualified actuary who has just been promoted to the Manager of the valuation team at Amazing Insurance Co.

Anne has a reputation for having strong technical actuarial skills and is thrilled to be promoted to manager. She has set her sights on the Chief Actuary role and is pleased to be one step closer to her goal.

Mark Manager is a recently qualified consulting actuary who has been promoted to Manager at the Fabulous Consulting Co.

Mark is known for his strong coding skills and ability to build sophisticated models. He has set his sights on becoming a Partner at Fabulous Consulting Co and knows that building his managerial skills will be key to his success in reaching this goal.

Throughout this book, you will see Anne and Mark make some common mistakes of many new actuarial managers. You will be able to learn from these scenarios to help avoid making these mistakes yourself.

How To Use This Book

Depending on the results of your self-assessment against the learning outcomes, you may use the book in different ways. The book is written in a specific order, so that each chapter builds on earlier chapters.

If you are a new manager who needs to build many new skills, you may choose to work through each chapter of the book in detail, and sequentially. However, if you are a more experienced manager with just a few areas to focus on, you may choose to dip into the chapters that are most relevant to your learning goals.

Talking through different management scenarios and challenges helps you develop your own values and perspectives as a manager before you are faced with real-life situations to tackle. Take a moment to consider how you might do this:

- If you are using this book as part of a leadership development program, you will already have the opportunity to discuss what you are learning with your peers.

- If you are reading this book on your own, consider who else you could discuss your reflections with: perhaps your manager, peers, or colleagues.

The book also provides access to online resources, such as videos, interviews, tools, and worksheets, to supplement and enhance your learning experience. These resources are designed to reinforce the concepts covered in the book and provide practical examples.

We have included space at the end of each chapter to record your notes. You might also choose to utilize a journal or workbook to complete your activities and capture your reflections as you work through the book.

Let's get into it!

1 Managing High-Quality Actuarial Technical Work

Introduction

One of the biggest challenges many actuaries face as they step into their first management role is knowing how to step back from doing the technical work themselves. New managers need to delegate and review technical work completed by other team members. But delegation isn't something we learn as part of our actuarial training. So, how do we learn this critical skill?

Let us see how Anne is finding this aspect of being a new actuarial manager.

It's 9pm on Wednesday night, and Anne has missed dinner with her friends. She is still at her desk correcting an error in the experience investigation results she presented to the leadership team today.

Since becoming a manager, Anne has had so much more work to do and not enough time to do it all. When she presented the results today, one of the executives asked a question highlighting an error in the team's work that Anne should have spotted. How humiliating!

Anne decides that her team is too inexperienced to be trusted to produce high-quality technical work and will need to do everything herself. If that means missing social events, like tonight's dinner with her friends, then so be it...

This chapter explores some practical steps that actuarial managers can take to help their teams produce high-quality actuarial technical work. We will also consider how managers can respond when mistakes are made. Compared with other team management roles, managing actuarial work often comes with additional considerations to meet our professional obligations.

Your team members may have less experience than you for a range of reasons, e.g. less general work experience, less technical experience, less subject matter knowledge, or there may be a capability gap. Junior team members may still be developing their own checking processes and, as the manager, you will need to find ways to manage the quality of your team's output without completing the work yourself.

As an actuarial professional, you have already developed ways of checking your own work. This will serve as a solid foundation for building your ability to review the work of others. Consider:

1. How do you currently check your own work?

2. What processes and checks do you already use to check your team's work?

3. Are each of these checks required for every situation?

4. What factors would drive the need for each of these checks?

As a new manager, you will be juggling many tasks and competing priorities. Taking some time to think about "what could go wrong" and building some checklists and tools to help you in your work can improve the quality and risk management of your team's work.

In this chapter, we will build some more structure around this process, and we will explore ways to handle mistakes if they arise.

Expert advice from an actuary:

Michael Storozhev is a senior actuarial leader in the travel insurance industry. He enjoyed the technical focus of his actuarial work and found it difficult to step back and allow his team to complete the technical work. However, Michael knows that delegating the technical work can benefit both his and his team's career development, as well as improving outcomes for his company and its customers.

> **Michael says**
>
> *"When done right, it allows you to scale yourself. Rather than being too focused on the first round of analysis, you get the opportunity to step back, review it, and understand how it also connects to other parts of what the team is doing. This broader perspective often leads to better solution for the business as a whole. Seeing the benefits helped the mindset shift I had to adopt, even though I initially found it difficult to let go."*

Learning Outcomes

Great Managers Live Here			
Meeting Organizational Objectives			
Professional Development	High-quality Technical Actuarial Work	Planning And Delivering Projects	Working With People Outside Your Team
	Managing People And Teams	Managing Your Time	Strategic Thinking
Supporting Optimum Well-being			

The primary and secondary learning outcomes associated with this chapter include:

Primary Learning Outcomes	• I can supervise technical work and have processes to check and review to ensure high quality without completing it myself. • I know how I would respond if a mistake was identified or a deadline is missed. • I have my own tools and processes to identify and mitigate risks relating to my team and our work.

Secondary Learning Outcomes	• I can delegate work effectively.

Take a moment to reflect on your self-assessment against these learning outcomes.

You may already have some processes and tools to support the production of high-quality technical work in your team. But perhaps, like many actuaries, you can relate to Anne? Maybe you have been in her situation yourself, wondering how you can step back and trust your team to deliver high-quality work. If, like Anne, you are still developing your tools and processes to manage high-quality technical work, this chapter is for you.

Preventing Mistakes

There are many ways to manage high-quality technical work. One way is to do everything yourself, although this is not a sustainable option for most actuarial managers. Building a skilled team and delegating effectively will help your team's workload and workflow, but delegation is only one part of the puzzle.

It can be helpful to think about managing high-quality technical work as an exercise in strategic thinking and risk management. This will involve consideration of the task from different perspectives, including the design and governance of the model, the skill of the person completing the work and the level of review and supervision required.

Great managers know how to manage high-quality technical work by understanding and managing risks around the tasks they assign to their team members. One framework that you might find helpful in preventing mistakes in your team's work is shown below:

| What is the risk of a mistake? | What could go wrong? | What controls are needed? | What review approach is required? |

Let us explore each of these in turn, and how they might have helped Anne.

What Is The Risk Of A Mistake Happening During This Activity?

Ask yourself:

- How likely is it that a mistake could be made during this activity?

- What would the impact be if a mistake were made?

- Is this something I need to do myself or can I delegate some or all of it?

- How important is this work and how much of my involvement / review is needed?

Anne could ask herself these questions and discover:

- We have solid processes in place to perform the experience investigation, so the likelihood of an error is low.

- If an error occurs, the pricing team may rely on incorrect information.

- It is important that we produce high-quality results.

On the basis of this assessment, Anne can see that it is important for the results to be accurate but that there are already some good checking processes in place.

What Could Go Wrong With This Activity?

Ask yourself:

- What are the common mistakes made in this activity?

- What are the risk areas for potential mistakes in this activity? (e.g., people, processes)

- If I have not done this activity myself, who could help me?

- Are there applicable professional standards?

You might use this example checklist to see how you might identify what could go wrong in one of your processes.

When Anne considers these questions, she realizes that:

- Errors could be made in the way the data are uploaded and assumptions set.

- She has a new analyst completing the work this year and has not completed an experience investigation before.

This tells Anne that there are still some risks in the process, mainly because of the new analyst who hasn't done this work before. Although there is a good process in place for this work, the analyst might not follow the process or may not have the experience to spot any errors. While the analyst is responsible for completing the work to the best of their ability (limited as that ability may be), Anne also has responsibility for the quality of the team's actuarial work product.

What Controls Are Needed?

Ask yourself:

- What risk management already exists for this work?

- What checks and controls do we need in place to manage these risks?

- What checks are already in place and what else do we need to develop?

When Anne considers the controls needed for this process, she realizes:

- The spreadsheet has built-in checks and there is comprehensive documentation to support the process (existing controls).

- Since we have a new analyst doing the work, we will involve the senior analyst who completed the work last year. This will also provide the senior analyst with a development opportunity (additional controls).

Thinking through risks and controls can help Anne refine the process of managing high-quality technical work.

What Review Approach Is Required?

Based on the answers to these questions, ask yourself:

- What review approach is needed?

- Could you safely delegate the task (or part of it)?

- How much supervision is required?

- Could anyone else help?

- Are current checks and controls sufficient?

- Should more checks be developed and implemented?

Thinking through these questions, Anne can see that:

- An error could impact pricing decisions, so steps must be taken to ensure high-quality work.

- There are existing controls in place to prevent an error in the calculations.

- Having a new, inexperienced team member means that more supervision and checking will be required to address the higher risk of an error.

Anne has a clearer assessment about what will be needed to delegate this work and still produce high-quality technical work.

Advice from an experienced actuarial manager:

Alan Hsu is a life insurance actuary who knows that mistakes happen to everyone.

Alan says

"Don't be afraid to make mistakes. Everyone makes mistakes, and everyone makes a lot of mistakes. I talk to other managers about early managers... and we laugh it off because it's like, 'Oh, did you do that thing where you take on too much work because you don't trust your team?' It's like, 'Yeah, I did that.' And you laugh about it because that's a very real early managerial thing to do."

Handling Mistakes

Despite the best risk assessment and implementation of checks and controls, mistakes still happen. Great managers know how to handle mistakes in a way that minimizes impact and enables improvements to be made while managing the human elements with the people involved. When mistakes are handled well, this can be a great opportunity to strengthen the skills and relationships of the team.

In real life, mistakes happen. As the manager, you need to create a safe environment so that your team members can admit and report mistakes.

CASE STUDY – An Inherited Error

Watch the author narrate this case study.

"Many years ago, I managed a team that used a spreadsheet model to calculate staff allocation across various regions. Based on agreed factors, one region might need 10 workers, another might need 20 workers, and so on. A few weeks into the role, one of my team members came to me and said, 'Julia, I've been updating the spreadsheet for this year's allocation and I found a mistake.'

Unfortunately, the calculations weren't working correctly and some areas had been allocated too many workers, while others weren't allocated enough. I thanked the team member for their honesty, but I was worried that this mistake had happened on my watch.

I spent time with the team member to understand what had happened and the impact of the error. Were we talking about an extra one or two people being misallocated, or many more? Once I understood the facts, I let my manager know that the issue had come to my attention and I was working through it. It was important to make sure she was in the loop early.
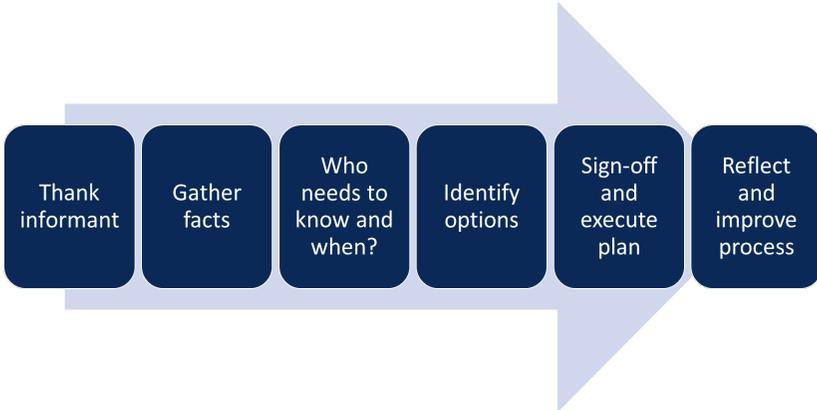
We then decided on a plan of action. We needed to communicate the error and how we planned to fix it for each of the regions. Some managers may have needed to adjust their staffing numbers.

I shared the plan with my manager and she made some additional suggestions. We then got to work fixing the error. Some people were not happy, but we did the right thing by correcting the error and communicating it appropriately.

Finally, we looked at the root cause. The error stemmed from a poorly built spreadsheet with hard-coded and hidden assumptions. We used this opportunity to tidy up the spreadsheet, remove unnecessary elements, and reduce the risk of similar errors in the future. Through this process, the team also learned some new skills in spreadsheet design and checking."

What are the lessons from this case study? Play the long game: cultivate a culture where people feel safe enough to admit and report mistakes, spend the time finding facts before you act, inform those who need to know, build a plan, and correct the mistake. Where possible, use the opportunity to learn from the mistake and improve the processes of your team.

Here is a simple approach you can apply to handle a mistake:

| Thank informant | Gather facts | Who needs to know and when? | Identify options | Sign-off and execute plan | Reflect and improve process |

1. **Thank the informant**

   It takes courage to bring a mistake to your manager. If someone alerts you to an error they have found, take a moment to thank them for letting you know. By doing this, you will build a stronger culture where future mistakes are less likely to be hidden.

2. **Gather the facts**

   What is known about the error? What is the impact? Who is affected? How material is the error? How did it occur? Understanding the facts will help you develop an appropriate response for your situation.

3. **Work out who needs to know and when?**

   Who needs to be alerted to the error? Does your organization have policies that guide your actions? Who else needs to be informed? What is the ideal timeline and communication method? Be transparent with your own manager or trusted peer to identify the best course of action.

4. **Identify options**

   What options are available to address the error? Who might help you brainstorm options, which could range from doing nothing, updating results, through to wider communication, or even escalating the issue? Taking the time to consider the range of options before taking action is likely to improve the outcome.

5. **Sign-off the plan, then execute**

   Once you have identified the best course of action from your available options, seek the necessary sign-offs before executing your plan. This might involve confirming your approach with your own manager, or it may require wider approval before executing.

6. **Reflect and improve the process**

   Once you have followed your agreed plan to address the error, take some time to reflect on what happened. Discuss the error and its cause with your team and collectively identify any improvements that could be made to prevent the error from occurring again.

Every error will be different, but having a clear process in your managerial toolkit that you can apply will help you feel more confident when the next error occurs.

Advice from a new manager:

Cameron Morris, a new manager, learned the value of creating a safe culture where people can report mistakes after discovering a mistake of their own.

> **Cameron says**
>
> *"I told the team leader 'Look, I've made a mistake. That's why this number wasn't working. I think we can still fix it.' They said 'Well, it's good that you feel a little bit bad because it shows that you care. But everyone makes mistakes. It would have been easy for you to not bring it up. I'm not going to get upset because what message is that sending?'*
>
> *One mistake is not going to mean that you've let people down. It's more about how you work as part of a team to hopefully identify mistakes or issues before they become big mistakes or issues."*

What Has Anne Learned About Managing Technical Work?

On that Wednesday night, Anne had few options other than to fix the error herself. But what could Anne apply from this chapter to manage future mistakes?

- Consider the risk and impact of a mistake occurring.

- Assess the skills of the team and upskill team members where necessary.

- Identify and develop the necessary checks and controls to improve the quality of work.

- Know that mistakes happen, so build a culture where people feel safe enough to report mistakes.

- When an error occurs, remember people first, check the facts, inform who needs to know, build a plan and correct the mistake. Make sure everyone learns from the mistake!

Don't fall into the common trap of doing everything yourself because you are worried about your team making a mistake. But do take the time to consider what could go wrong, upskill the team if needed, and encourage your team to build checks into their work so they can identify and address errors before you even review their work. You might also consider whether there are others in your team who can help newer or more junior team members when they are learning new skills.

Finally, remember that as a manager, you probably can do the technical work faster and more accurately than your team. This does not mean that you should! You will miss out on learning new skills yourself, and your team will miss out on opportunities to develop their skills. We will discuss more about delegation of tasks as part of Managing Your Time in Chapter 4.

Expert advice from an experienced actuarial leader:

Jennifer Lang has held C-suite and non-executive director roles, so she knows a thing or two about effective delegation:

> **Jennifer says**
>
> *"I might be better than other people at a bunch of things, but what are the things I'm most better at, that only I can do and that they can't do? The other things, maybe they can't do it as well as I can right now, but they probably will be able to. It's about really understanding where you can make the most difference and just doing that."*

Apply

Build Your Own Review Approach To Help You Review Work Completed By Others.

Now it's your turn to apply what you've learned in this chapter. You can download an editable worksheet to help you complete these activities.

1. Choose an activity or process that is completed regularly by your team, e.g.:
   - Production of pricing advice
   - Monthly reporting deliverables
   - Consulting advice projects

2. Use the framework from this chapter to identify the review approach for this activity or process that you could use when reviewing someone else's work. Ask yourself:
   - What is the likelihood and impact of an error for this activity or process?
   - What could go wrong?
   - What checks and controls are (or could be) applied?
   - What is the review approach required?

3. There are many ways to build and document your review approach, depending on your preferences, styles, and what you already have available. Some actuaries may write this down, while others may outline their approach using OneNote, Excel, or Word. Your organization or auditors may require a specific format. You could also use a copy of the editable worksheet for this purpose.

4. Implement this review approach at work on your next project.

5. List three principles that you feel are important to keep in mind when handling an error in your team's work.
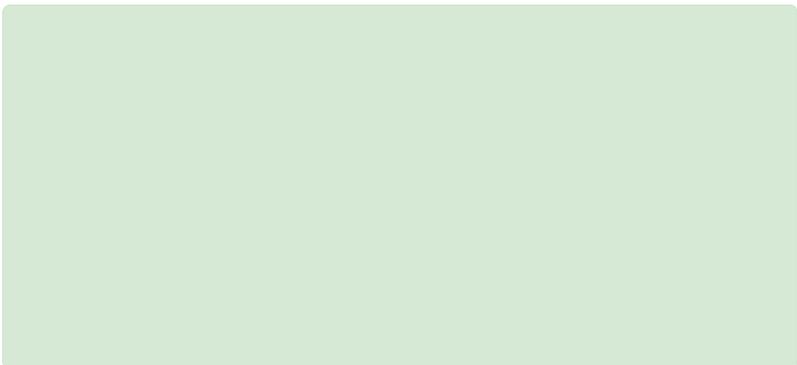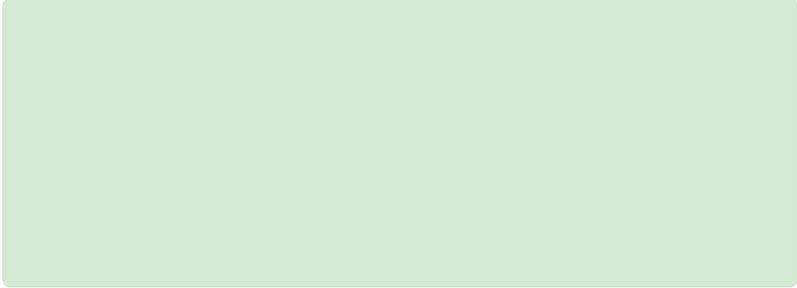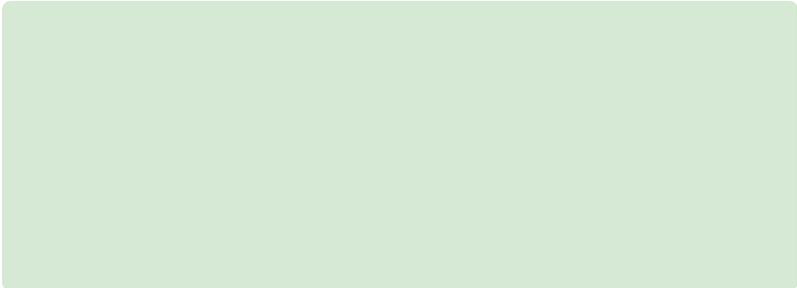
Reflect: What Did You Learn?

Now that you have built and applied your own review process, consider what you have learned from this chapter.
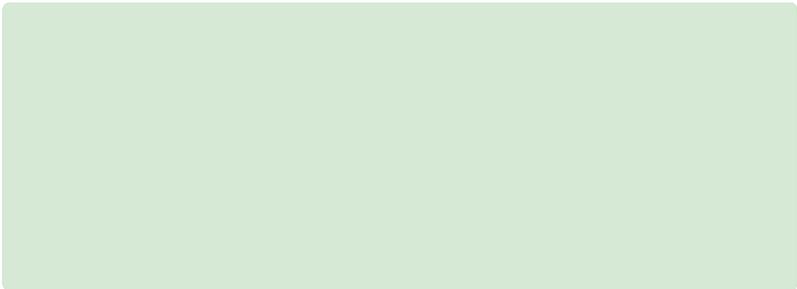
Personal Reflection

- Was your review approach helpful? What else could you include?

- Could you apply this framework to develop review approaches for other activities or processes in your team?
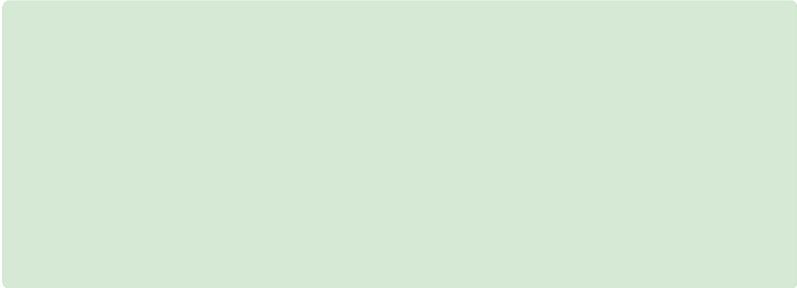
- How would you handle a mistake in your team's work?

Wider Reflection

- Consider sharing your review approach example with a peer. You might have similar points, but you might be able to share ideas and feedback to enhance your approach.

- Discuss your review approach with someone (maybe your manager or a colleague) at work. What else would they add? Perhaps you have something that they hadn't thought about before?
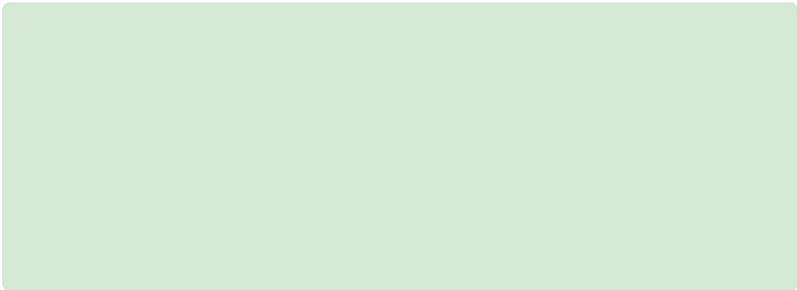
- If this is something you already have in place and do, or you have your own experience of reviewing work or handling mistakes, consider sharing your insights with the group.
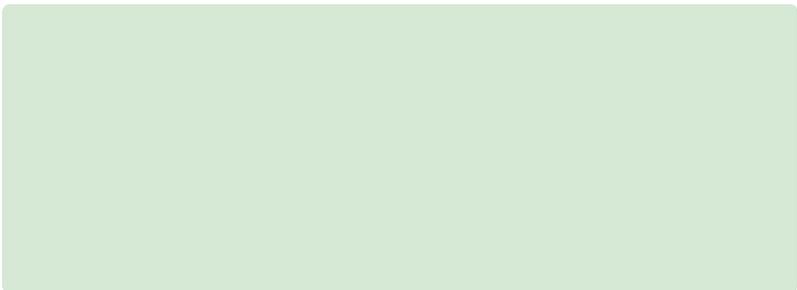
Further Resources

Managing high-quality technical work is a key skill for new managers. Here are some additional resources you might find useful as you build your skills.

Supporting Material – Preventing Mistakes

The following materials may assist you in developing your mistake prevention processes:

	Description	Learning Materials
1	Sample checklist to identify "what could go wrong" and associated checks and controls needed.	Example checklist
2	Our accounting colleagues use a range of checklists to help them review work. Here is a link to a sample review process checklist accountants use from CPA Australia.	View Checklist
3	One systematic approach we use when checking new models is our Model Validation process. Here is a link to a sample review approach for model checking.	Model Validation PDF

Supporting Material – Handling Mistakes

The following materials may assist you in developing your mistake handling:

	Description	Learning Materials
4	Real life example: Handling an inherited mistake	View Video
5	Further guidance: How to handle a mistake you have made	Youtube Video
6	Further guidance: How to handle a mistake made by someone in your team	Youtube Video

Transitioning from a technical role to a managerial position requires actuaries to build non-technical skills such as delegation, communication, and project management. This book, based on the Guardian Actuarial Leadership Program, offers practical, actionable solutions through expert insights, real-world examples, and a "Learn, Apply, Reflect" coaching model.

Follow the journeys of Anne Actuary and Mark Manager, and utilize valuable resources like online tools and self-assessments to build your management toolkit. Equip yourself with the knowledge and confidence to lead your team to success and become the actuarial leader you were meant to be!

"Aspiring Actuarial Leaders is a powerful and concise guide for new managers. Julia breaks down each skill step-by-step. Then she uses examples and quotes from practicing actuaries, so we can connect the concepts to daily actuarial work. This book fills a void that can help every actuarial manager gain the new skills they need for success."

- Linley Baker, FSA, MAAA, FLMI, Experienced Actuary, International Award-Winning Author

About the Author

Julia Lessing is a qualified actuary and executive coach based in Australia. Drawing on her 20+ year career as a consulting actuary, coach and educator, Julia developed the Guardian Actuarial Leadership Program to help actuaries transition from technical roles to team leaders. Actuaries around the world have graduated from the program with measurable improvements in their management skills and confidence.

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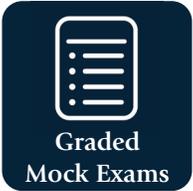
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Online Courses

Alongside our P & FM study guide, this course is comparable to a one-semester college class. This course offers SOA Exam practice problems, video solutions, timed practice tests, sample questions, and more. You'll also have 1:1 email support from an instructor for 180 days after purchase.

The Advanced topics in Predictive Analytics video course is designed to help you more easily climb the steep ATPA learning curve. This module-focused video course for Topic 3 in the syllabus, includes videos, end of module assessments and lecture slides. This video course is a deep dive into the three modules. Access to an instructor during the duration of the course as well as participation in a discussion forum.

Available for P, FM, and ATPA

Formula Sheets

This at-a-glance tool helps you memorize and recall key formulas and information. It covers important formulas needed to prepare your exam. Also, it's an easy-to-print format you can study with, no matter where you are.

Available for P, FM, FAM, ALTAM, ASTAM, PA. ATPA, MAS-I, MAS-II, CAS 5
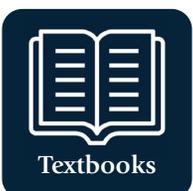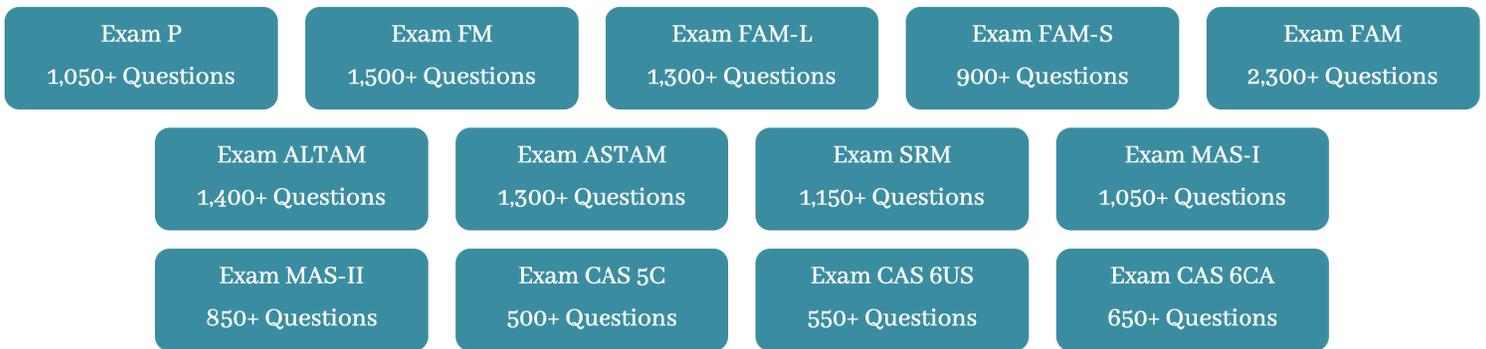
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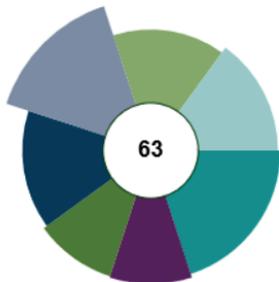
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Question

Difficulty: Advanced ⓘ

An airport purchases an insurance policy to offset costs associated with excessive amounts of snowfall. The insurer pays the airport 300 for every full ten inches of snow in excess of 40 inches, up to a policy maximum of 700.

The following table shows the probability function for the random variable X of annual (winter season) snowfall, in inches, at the airport.

Inches	[0,20)	[20,30)	[30,40)	[40,50)	[50,60)	[60,70)	[70,80)	[80,90)	[90,inf)
Probability	0.06	0.18	0.26	0.22	0.14	0.06	0.04	0.04	0.00

Calculate the standard deviation of the amount paid under the policy.

Possible Answers

A 134   ✓ 235   ✗ 271   D 313   E 352

Help Me Start

Find the probabilities for the four possible payment amounts: 0, 300, 600, and 700.

Solution

With the amount of snowfall as X and the amount paid under the policy as Y, we have

$$
\begin{array}{c|c}
y & f_Y(y) = P(Y = y) \\
\hline
0 & P(Y=0) = P(0 \le X < 50) = 0.72 \\
300 & P(Y=300) = P(50 \le X < 60) = 0.14 \\
600 & P(Y=600) = P(60 \le X < 70) = 0.06 \\
700 & P(Y=700) = P(Y \ge 70) = 0.08
\end{array}
$$

The standard deviation of Y is $\sqrt{E\left(Y^2\right) - [E(Y)]^2}$.

$$E(Y) = 0.14 \times 300 + 0.06 \times 600 + 0.08 \times 700 = 134$$

$$E\left(Y^2\right) = 0.14 \times 300^2 + 0.06 \times 600^2 + 0.08 \times 700^2 = 73400$$

$$\sqrt{E\left(Y^2\right) - [E(Y)]^2} = \sqrt{73400 - 134^2} = 235.465$$

Common Questions & Errors

Students shouldn't overthink the problem with fractional payments of 300. Also, account for probabilities in which payment cap of 700 is reached.

In these problems, we must distinguish between the REALT RV (how much snow falls) and the PAYMENT RV (when does the insurer pay)?. The problem states "The insurer pays the airport 300 for every full ten inches of snow in excess of 40 inches, up to a policy maximum of 700." So the insurer will not start paying UNTIL AFTER 10 full inches in excess of 40 inches of snow is reached (say at $50+$ or 51). In other words, the insurer will pay nothing if X<50.

Rate this problem   👍 Excellent   👎 Needs Improvement   👎 Inadequate

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