

# Backup Diary ...Simple, safe, organised

A simple diary system for every day of the year. Includes tape identification labels and operating procedures

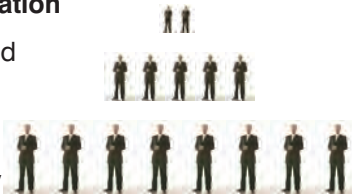


## How safe is your data?

We take our ability to access computer data for granted... until something goes wrong. What would happen to your business if you lost your computer data, and subsequently discovered that your backup tapes were invalid? With the increasing dependence on computer records now is the time to streamline and simplify your tape backup procedures. The Communicat Backup Diary provides a simple, safe and well organised procedure to minimise the risk that you will ever find yourself in the situation of being unable to retrieve essential data from your backup tapes.

## Father, Grandfather, Son (GFS) tape rotation

There is general agreement about the need for a multi-generational backup policy, known as a "Grandfather, Father, Son" system. The question is, how should this policy be implemented? In an emergency you may need to retrieve data from a previous day, week, month or year. How can you design a daily backup system which will meet this requirement and where the daily process is simple, robust and foolproof? It is also essential that the process can be easily adopted by other staff when the usual person is absent on leave.



Under the GFS system "Son" tapes are your daily tapes, Father tapes are your weekly tapes and Grandfather tapes are your monthly and yearly tapes. This still leaves a lot of room for interpretation. For example: Do you need to retain Grandfather/monthly tapes for each month of the year? How often should you overwrite your tapes?

There is no single "one size fits all" interpretation of the Grandfather, Father Son policy. You need to choose an interpretation and cycle which meets the needs of your organisation.



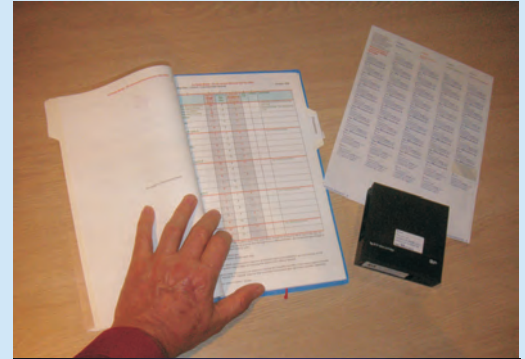
## The law

Australian tax laws require you to retain data for seven years. Corporate laws also require long term retention of data. It is also a fiduciary responsibility of directors and managers to protect the assets of shareholders, including the computer data assets and records. Under US Sarbanes-Oxley law it is legally mandatory to adopt the Grandfather, Father Son backup principle. Consequently, Australian subsidiaries of US organisations are also required to comply.

In addition, any prudent manager knows that it simply makes sense to take precautions and protect your data against both major disruption or and also minor losses of data. Depending on the type and extent of a data loss, and the length of the delay before the loss is discovered, it may be difficult or impossible to retrieve missing data in the absence of a generational backup procedure. In some circumstances you may need to recover data from the previous day, a week ago, a month ago or retrieve data from further into the past, even from last year.

## The Backup Diary Method

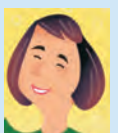
This system simplifies the daily backup process to a level where this vital task can be delegated to a trusted employee with minimal training. The Backup Diary method reduces risks such as mishandling tapes and using the wrong tape, which can break down the integrity of your GFS backup procedure.



The Diary provides a simple and virtually foolproof backup process. We list below some of the requirements of an effective backup system:

- The procedure must be simple, proven, clearly documented and easy to follow.
- Ensure that the person who performs the backup procedure has read through the procedures and is trained to perform safe backup and tape handling procedures.
- IT skills are not required to achieve an effective backup procedure. We recommend that the task be delegated to a trusted and reliable person who has sufficient time to perform the task every day, e.g. your receptionist or accounts clerk.
- Minimum of three people must understand the procedure (to cover absences).
- Tapes must be transferred off-site every evening. Most of your tape data must be -stored off-site. Only the tapes for today, tomorrow and spare tapes should be held on-site.
- Every three months send a tape for testing by Communicat or another qualified organisation, to verify the integrity of your tape system. That is, to ensure that the tapes can be read on another separate tape drive.
- Tape drives must be maintained, serviced and independently checked at least every 6 months.

**To request your Diary contact us:**  
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**The Communicat Backup Diary** is a complete backup system in a kit. It includes a diary page for every month and day of the year, adhesive labels to simplify the identification of your tapes and a full procedure manual.

Each daily diary entry provides clear instruction regarding:

- Which Tape ID which should be in the tape drive (and taken off-site);
- Which Tape should be inserted into the tape drive; and
- Which Tape to bring in from off-site for the next day's backup.

### Choose the Tape Backup Cycle to suit the needs of your organisation

Everyone agrees that the "Grandfather, Father Son" method is the ideal backup policy. The question is... to what extent? There is no "one size fits all" backup method. How reliant are you on your data? The answer to this question will determine which backup cycle matches the needs of your organisation.

	Quantity of tapes required	Retention period of data before it is overwritten by re-use of the tape in the next tape cycle				
		Daily data	Weekly / Friday data	Monthly data	End of Calendar Year data	End of Financial Year data
Level 0: Basic Essentials Only suitable for Very Small Networks up to 3 PCs	15	1 week	1 month	3 months	3 months	2 years
Level 1: Minimum Security	26	1 week	1 month	1 year	1 year	permanent
Level 2: Low-Cost Basic Security	38	2 weeks	3 months	1 year	1 year	permanent
Level 3: Simple-Basic Security	42	1 month	1 month	1 year	1 year	permanent
Level 4: Medium Security	50	1 month	3 months	1 year	1 year	permanent
Level 5: High Security	82	3 months	3 months	1 year	1 year	permanent
Level 6: Very High Security	121	3 months	1 year	1 year	1 year	permanent

We provide different cycles and versions of the diary depending on the size and type of your organisation and the importance of your data to your business. We also list below an indicative guide to assist you in choosing a tape cycle method to suit the needs of your organisation.

**Levels: Level 0: Basic Essentials** is the absolute the bare minimum cycle. It is only suggested for branch offices or very small businesses where there is a tolerance of a significant level of risk of losing data. There is significant risk in using the 15 tape system, however we provide you with the diary so that, if you choose this method, you have clear procedures to follow. This method should not be used on networks exceeding three PCs.

**Level 1: Minimum Security** is our minimum recommended system. As a general guide it should not be used on networks above 10 workstations.

**Level 2: Low-Cost Basic Security** is generally suitable for systems up to 20 PCs

**Levels 3 to 6:** These cycle methods are provided for systems exceeding 20 PCs.

### Why do you need so many backups?

Organisations today store 10 to 100 times the quantity of data compared with five years ago. Organisations are also much more dependent on their information than in previous years. With the advent of electronic documentation (invoices etc.) it is quite common for there to now be office systems where the main paper records have been dispensed with altogether, and the computer records are the only record of transactions. Under taxation law it is legally compulsory to retain business transactional information and documentation (e.g. invoices) for a minimum period of seven years. These trends show the need for a new approach to backup.

What is your data retention policy? In the event of a loss of data where more recent tapes were also missing the required data, how far back into your archive would you need to delve to retrieve the information required?

Your tape backups are a vital insurance policy. If your organisation experiences a serious loss of data, no one will thank you for economising on your backups.

The aim of all of these procedures is to provide as many fallback solutions as possible to minimise the risk a combination of problems striking your organisation. Operating multiple backups will minimise the risk of the worst possible scenario, where your data is lost altogether, or whether a lengthy and expensive rebuilding process is required.

### There are two situations where you may need to retrieve data from older tapes:

1. Data may be subjected to a crash or other problem and you may discover that your backups have not been working correctly for some time. We emphasise the importance of having your tape backup system independently checked by your Communicat technicians on a regular basis, at least three monthly as a minimum. Having your in-house staff member check the tapes is no proof that your tape is actually working correctly. Communicat technicians will take a test tape off site to our workshops and we will check that the data is actually stored on the tape in a retrievable condition. Malfunction problems such as misaligned tape heads, environmental factors (e.g. magnetic fields), media faults, mishandling etc. can mean that even though you are backing up your data every day, it may be impossible to retrieve the data.
2. Where there is a progressive loss of data over time. Progressive data losses can result from a computer virus, mechanical failure, media failure, damage to tape by physical or environmental factors (e.g. temperature, humidity, breakage, fire) procedural error (such as inadvertently excluding data from the backup routine), mishandling, volume data size exceeding the size of the tape backup and also sabotage from external hackers or internal saboteurs. If such an event occurred in your organisation you would need to backtrack through older tapes until you find a "clean" copy of the data and/or the missing data.

Many organisations have realised that, as a result of these factors, they cannot afford to take risks with their data. Many organisations are upgrading their data retention policies to reduce their exposure to these risks.

It is up to you to decide which backup method is suitable for your organisation. Level 1 method is the minimum level we recommend for any organisation, and is only really suitable for small organisations (e.g. up to 10 workstations). If your organisation is subject to Sarbanes-Oxley compliance or has a high reliance on computer data then Level 2 is recommended as the minimum required standard.

**The Grandfather, Father Son system - simplified examples of different cycles/levels which comply with the GFS concept**

The following chart provides a simplified comparison of the different cycles/levels of tape rotation, and an illustration of how each method implements the Grandfather/Father/Son principles. These principles are embodied in the diaries in a simplified form, to ensure that the task of tape rotation is quick, easy and error-free. The diaries also make allowance for public holidays, which make the schedule more complex. For example, if a Month-End tape is scheduled for a day which happens to be a public holiday, then the Diary automatically schedules the Month-End to the previous day.

<b>Level 0 - Basic Essentials</b>									
<i>Only suitable for very small networks - up to 3 PCs</i>									
		<b>Son</b>	<b>Son</b>	<b>Son</b>	<b>Son</b>	<b>Father</b>	<b>Grandfather</b>		
Month 1	Week 1	Monday	Tuesday	Wednesday	Thursday	Friday 1	Month 1		
	Week 2	Monday	Tuesday	Wednesday	Thursday	Friday 2			
	Week 3	Monday	Tuesday	Wednesday	Thursday	Friday 3			
	Week 4	Monday	Tuesday	Wednesday	Thursday	Friday 4			
Month 2	Week 5	Monday	Tuesday	Wednesday	Thursday	Friday 1		Month 2	
	Week 6	Monday	Tuesday	Wednesday	Thursday	Friday 2			
	Week 7	Monday	Tuesday	Wednesday	Thursday	Friday 3			
	Week 8	Monday	Tuesday	Wednesday	Thursday	Friday 4			
	Week 9	Monday	Tuesday	Wednesday	Thursday	Friday 5			
Month 3	Week 10	Monday	Tuesday	Wednesday	Thursday	Friday 1			Month 3
	Week 11	Monday	Tuesday	Wednesday	Thursday	Friday 2			
	Week 12	Monday	Tuesday	Wednesday	Thursday	Friday 3			
	Week 13	Monday	Tuesday	Wednesday	Thursday	Friday 4			

*Monthly tapes are then **re-used** in months 4, 5, 6, etc.  
End of Financial Year 1, Year 2*

*End of Financial Year tapes are then **re-used and overwritten** in years 3, 4, etc.  
Plus: 1 Test tape*

**Total: 15 tapes**

<b>Level 1 - Minimum Security</b>									
<i>Typical application: networks up to 10 workstations</i>									
		<b>Son</b>	<b>Son</b>	<b>Son</b>	<b>Son</b>	<b>Father</b>	<b>Grandfather</b>		
Month 1	Week 1	Monday	Tuesday	Wednesday	Thursday	Friday 1	Month 1		
	Week 2	Monday	Tuesday	Wednesday	Thursday	Friday 2			
	Week 3	Monday	Tuesday	Wednesday	Thursday	Friday 3			
	Week 4	Monday	Tuesday	Wednesday	Thursday	Friday 4			
Month 2	Week 5	Monday	Tuesday	Wednesday	Thursday	Friday 1		Month 2	
	Week 6	Monday	Tuesday	Wednesday	Thursday	Friday 2			
	Week 7	Monday	Tuesday	Wednesday	Thursday	Friday 3			
	Week 8	Monday	Tuesday	Wednesday	Thursday	Friday 4			
	Week 9	Monday	Tuesday	Wednesday	Thursday	Friday 5			
Month 3	Week 10	Monday	Tuesday	Wednesday	Thursday	Friday 1			Month 3
	Week 11	Monday	Tuesday	Wednesday	Thursday	Friday 2			
	Week 12	Monday	Tuesday	Wednesday	Thursday	Friday 3			
	Week 13	Monday	Tuesday	Wednesday	Thursday	Friday 4			

*Followed by Months 4, 5, 6,....12. Monthly tapes are **retained for 12 months**  
End of Financial Year 1, Year 2, Year 3, etc.  
End of Fin Year tapes are **retained permanently**  
Plus: 2 Test tapes*

**Total: 26 tapes**

<b>Level 2 - Low-Cost Basic Security</b>									
<i>Typical application: networks up to 10 workstations</i>									
		<b>Son</b>	<b>Son</b>	<b>Son</b>	<b>Son</b>	<b>Father</b>	<b>Grandfather</b>		
Month 1	Week 1	Monday odd	Tuesday odd	Wednesday odd	Thursday odd	Friday 1	Month 1		
	Week 2	Monday even	Tuesday even	Wednesday even	Thursday even	Friday 2			
	Week 3	Monday odd	Tuesday odd	Wednesday odd	Thursday odd	Friday 3			
	Week 4	Monday even	Tuesday even	Wednesday even	Thursday even	Friday 4			
Month 2	Week 5	Monday odd	Tuesday odd	Wednesday odd	Thursday odd	Friday 5		Month 2	
	Week 6	Monday even	Tuesday even	Wednesday even	Thursday even	Friday 6			
	Week 7	Monday odd	Tuesday odd	Wednesday odd	Thursday odd	Friday 7			
	Week 8	Monday even	Tuesday even	Wednesday even	Thursday even	Friday 8			
	Week 9	Monday odd	Tuesday odd	Wednesday odd	Thursday odd	Friday 9			
Month 3	Week 10	Monday even	Tuesday even	Wednesday even	Thursday even	Friday 10			Month 3
	Week 11	Monday odd	Tuesday odd	Wednesday odd	Thursday odd	Friday 11			
	Week 12	Monday even	Tuesday even	Wednesday even	Thursday even	Friday 12			
	Week 13	Monday odd	Tuesday odd	Wednesday odd	Thursday odd	Friday 13			

*After Week 13 the Friday tape cycle starts at Friday 1 again*

*Followed by Months 4, 5, 6,....12. Monthly tapes are **retained for 12 months**  
End of Financial Year 1, Year 2, Year 3, etc.  
End of Fin Year tapes are **retained permanently**  
Plus: 2 Test tapes*

**Total: 38 tapes**

a	b	c	d	e	f	g	h	i
Wk	Date	Day	Morning Out Check & Remove	Morning In Insert	Evening Collect From off-site for next day	OK? Y/N	Initials	Comments
49	3	Monday	11	1	2	✓		<div style="border: 1px solid blue; padding: 5px;">                     The diary provides clear instruction for your daily backup routine, including:                      • Which tape should be removed from the tape drive and taken off-site;                      • Which tape to insert; and                      • Which tape to collect from off-site for the next day.                       Each day you simply tick the "OK" box                 </div>
	4	Tuesday	1	2	3	✓		
	5	Wednesday	2	3	4	✓		
	6	Thursday	3	4	5	✓		
	7	Friday End wk 1 of mth	4	5	1			
50	10	Monday	5	1	2			Use cleaning tape today
	11	Tuesday	1	2	3			
	12	Wednesday	2	3	4			
	13	Thursday	3	4	6			
	14	Friday End wk 2 of mth	4	6	1			
51	17	Monday	6	1	2			Use cleaning tape today
	18	Tuesday	1	2	3			
	19	Wednesday	2	3	4			
	20	Thursday	3	4	7			
	21	Friday End wk 3 of mth	4	6	1			
52	24	Monday	7	1	4			Use cleaning tape today
	25	Tuesday Christmas Day	-	-	-			
	26	Wednesday Boxing Day	-	-	-			
	27	Thursday		4	5			
	28	Friday	4	5	12			
	31	Monday End month Dec	5	12	2			Use cleaning tape today



Assumption: The schedule above assumes that your office is operating throughout the holiday period. If your office is closed during the holiday period you may request a tailored backup schedule to suit the needs of your organisation. Fees will apply to cover the time required to design a tailored schedule for your organisation.

It is imperative that all tapes be stored at an off-site location away from your office, except for those actually in use on the day, so as to prevent loss of data in the event of an emergency such as fire damage to your office premises. Do not entrust tape storage to a fireproof safe as the tapes will probably melt if there is a fire.

- The only tapes which may be kept in the office are:
- (a) Yesterday's tape (which will be taken off-site each day);
  - (b) Today's tape; and
  - (c) The spare/emergency tapes which are required in case the scheduled tape is unavailable for use as a backup on the designated day (e.g. if the person responsible for bringing the tapes to the office is absent).

If you need to use a spare/emergency tape make sure you re-label it to indicate the Tape#ID and title of the missing tape to indicate its new contents. Then when you recover the "original" tape for that day mark it as a spare tape (as it has now been replaced).