DOT/FAA/CT-TN89/58

The Controller Memory Handbook

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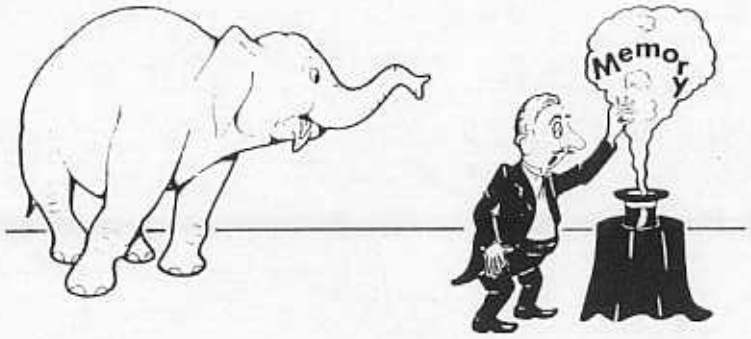
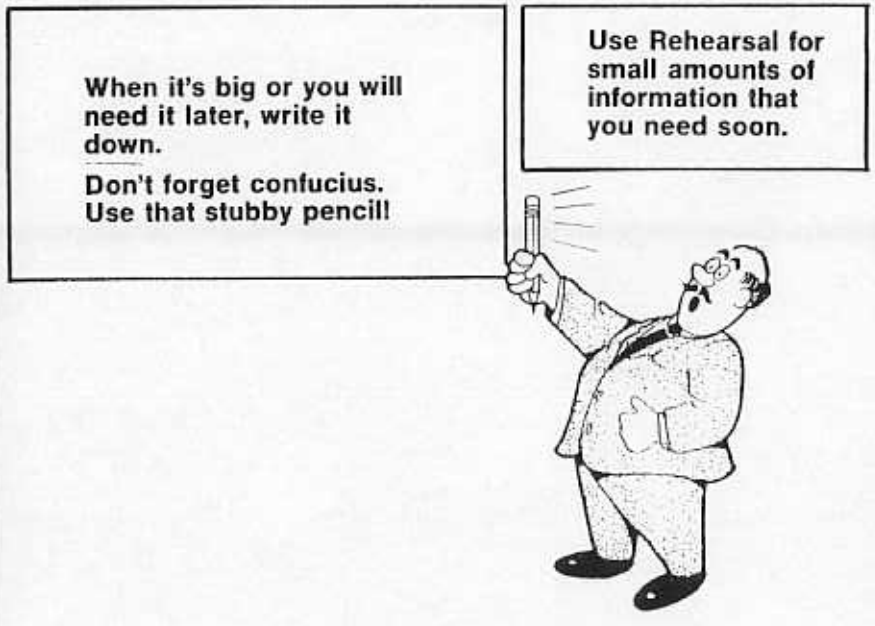


It is not how much you remember that counts. What is really important is placing yourself in a position so you have what you need when it will do the most good. There are no magic answers to this, and you can not depend on a passive approach to memory. The keys to unlock your memory potential are an awareness of the memory process, self management, attention to the right details, and good, old fashioned "hard work"!

INTRODUCTION

People often take memory for granted. It is not uncommon for us to assume we will remember something important and then promptly forget it when we need the information most. In every day life such lapses generally cause no great problems. In the world of Air Traffic Control, (ATC) what you don't know when you need to know it can have serious consequences. A task force group working for the FAA administrator in 1988 identified memory lapses as one of the principle causes of controller errors.

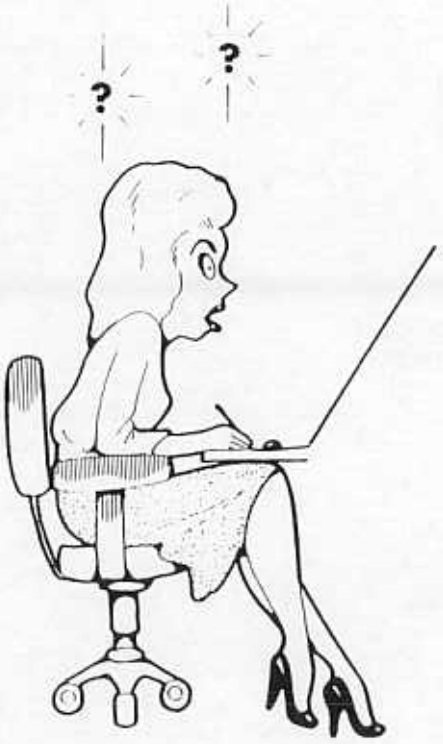
This handbook was assembled to provide controllers working in the air traffic control system of today with a sequence of information and helpful hints about human memory. The goal of this project is to provide controllers with common sense tools based on what is currently known about memory. Hopefully, much of what is included here is already in use by experienced personnel.



Have you ever forgotten something really important? In a demanding system like air traffic control not having a critical piece of information can be catastrophic. Having the right stuff depends in part on good memory management.

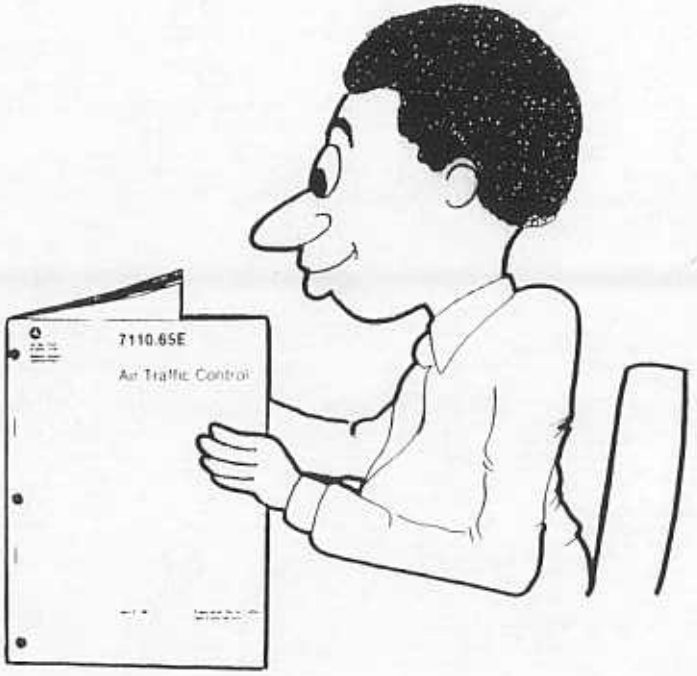
Review your personal situation realistically. Plan and develop a Strategy!

Use your memory Resources wisely. Don't try to memorize more than is absolutely necessary.

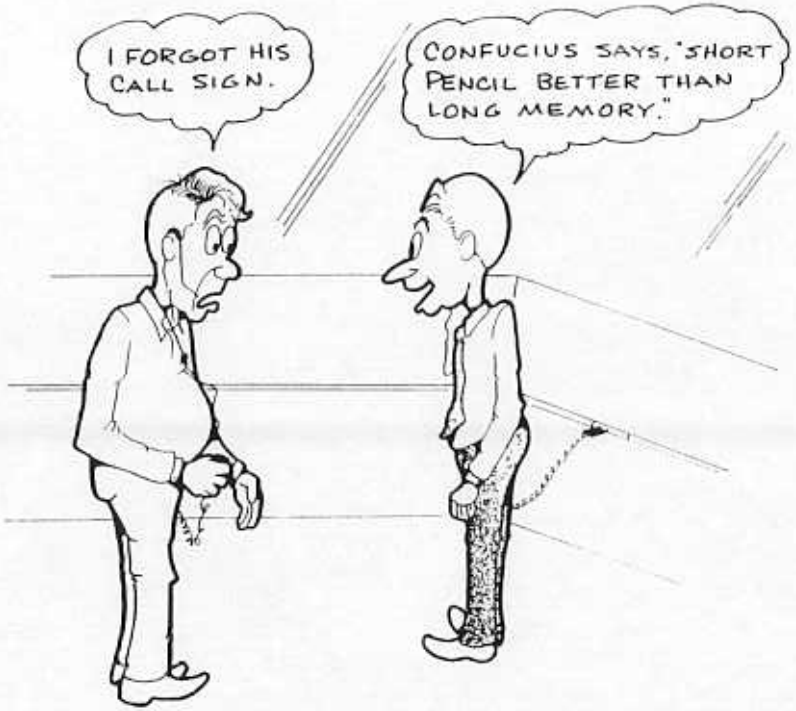


Information is constantly coming in on the bottom or sensory floor. You see or hear it in it's original form. If you do nothing with it, it will be gone in a flash.

Stress is an ugly six letter word for many of us. In the work place your memory and overall performance can go downhill because of the emotional baggage you bring in with you. To the extent that you can, leave these emotions and thoughts at home or in the break room. If you cannot let them go, then talk to someone about it. Also, moderate exercise is a great way to relax. (Consult your physician)

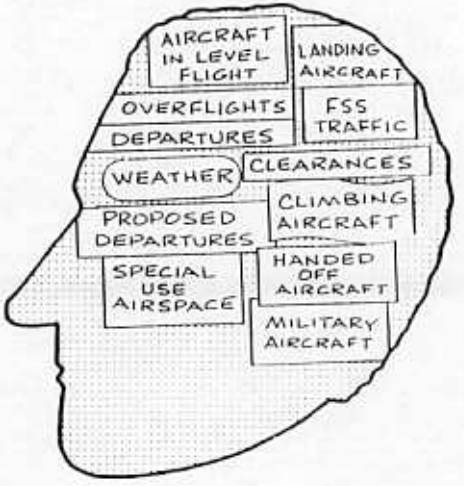


The top floor of your warehouse contains everything you have put there based on your training and experience. You can think of this level as the top management in your memory system. This part of memory helps you to effectively use the other two levels.

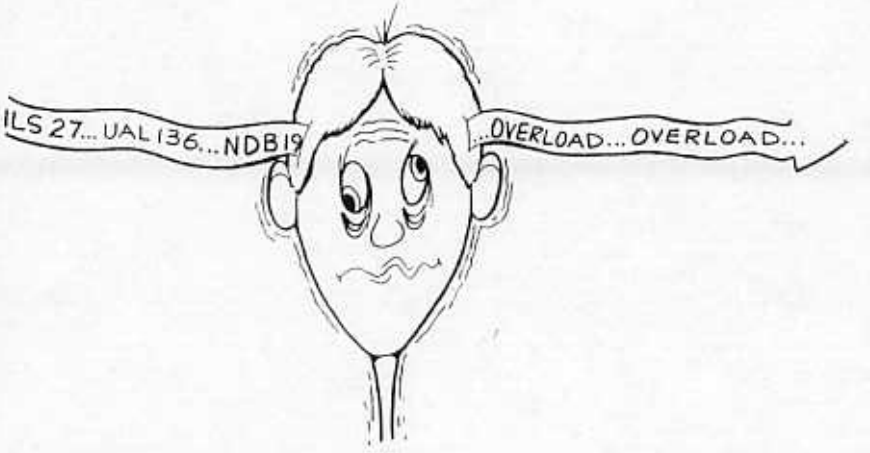


Information has a way of slipping through your fingers. New information can easily distort or block the storage and later recall of older information that preceded it. Even if you are busy, write it down. Develop your own system and use approved marking techniques where appropriate. Then the information will be there when you need it later.

Each of us is different in terms what will help us store and recall what we need to know, when we need it. The key is to actively develop a personal memory strategy. Try different techniques. Discuss how you handle the load with other controllers at you facility. They may have techniques which haven't occurred to you.



Chunking involves grouping the information you may need into categories. Once you have each element assigned to its category, you can recall details much easier by bringing up the category name, which requires a simpler form of memory called "recognition." There is an old expression in memory research called the " Magic number 7 plus or minus 2." It means that on the average, humans can operationally use about 7 distinct chunks of information at any one time.



Another important fact: Memory is a limited resource. If you try to memorize too much, you may overload.

"Rehearsal" is a simple technique. It can help you store and recall small amounts of information which you will need in the short term. All it takes is repeating the information to yourself a few times. It is faster than writing but not as reliable if you need to retain the material for a long time.

Focus on retaining information that you do need. Let the nonessential material go. Be Selective!

There are all sorts of information available to you for the taking. You just have to reach out and use it. If it is right there then memorize it only if you need it faster than you can look for it.

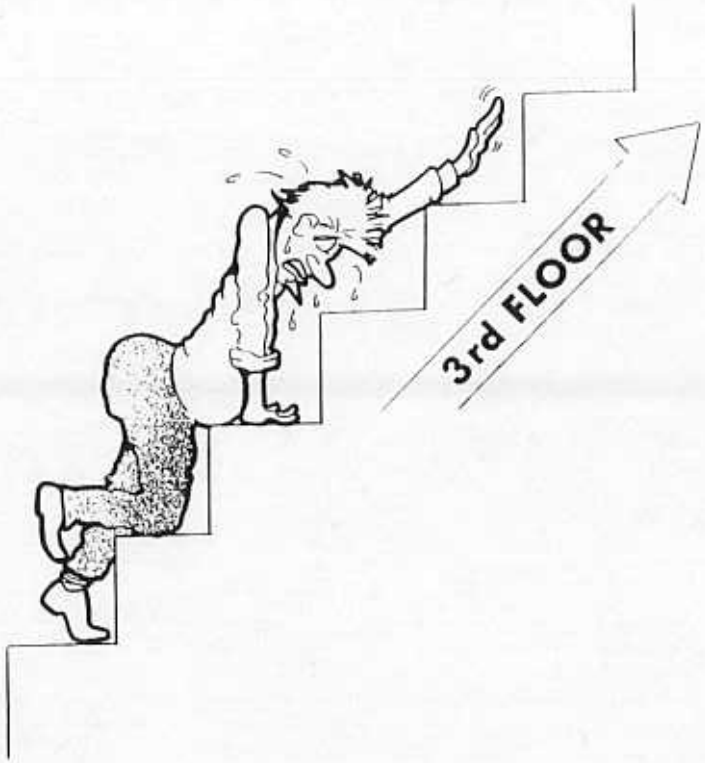
Memory takes effort. You can not assume that mere exposure to information will be enough to remember it later. Just because the information is in front of you right now does not mean you will have it when you need it. It is amazing how fast we lose details when we have not actively been trying to retain them.

Keep in mind that you do not have to remember everything. Part of your strategy for working your position should be knowing where to look for information. The more time critical a piece of information is, the closer and the more accessible you will want to keep it. Organize your reference material and up date it constantly.

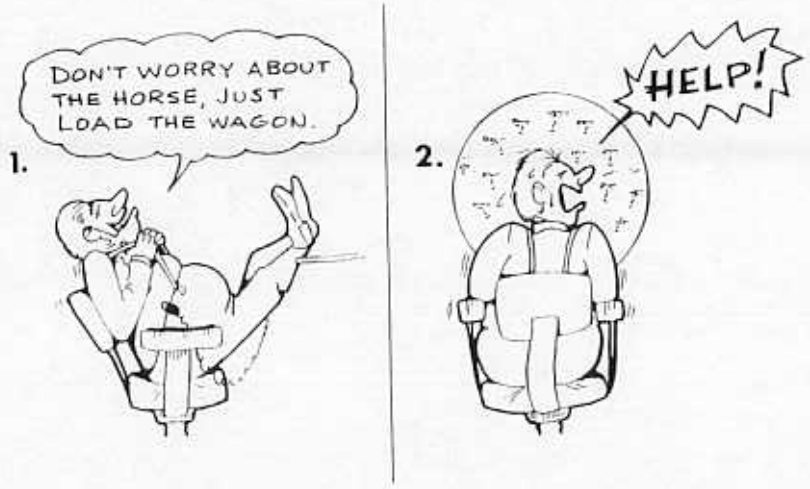
As human beings, we can only store a limited amount of information. We can increase our limits by a process called "chunking." This means organizing the information in a way which is meaningful to us. In ATC, one way to do this is to set up the traffic flow so the controller knows what to expect based on aircraft location or direction. In the example above, all the aircraft on the downwind leg become a "chunk" or category and will be treated alike unless something comes up.

A key to any effective strategy is good planning. Don't be caught short. Plan Ahead! Stay ahead of the system and the demands for information it will make on you.

You will never recall what you have not accurately received. No one else will ensure that you got the message. You should not assume what would or should be said based on your past experience. Listen actively and follow along on hard copy (like the flight strip) if you have it. Ask for a repeat if you have any doubts.

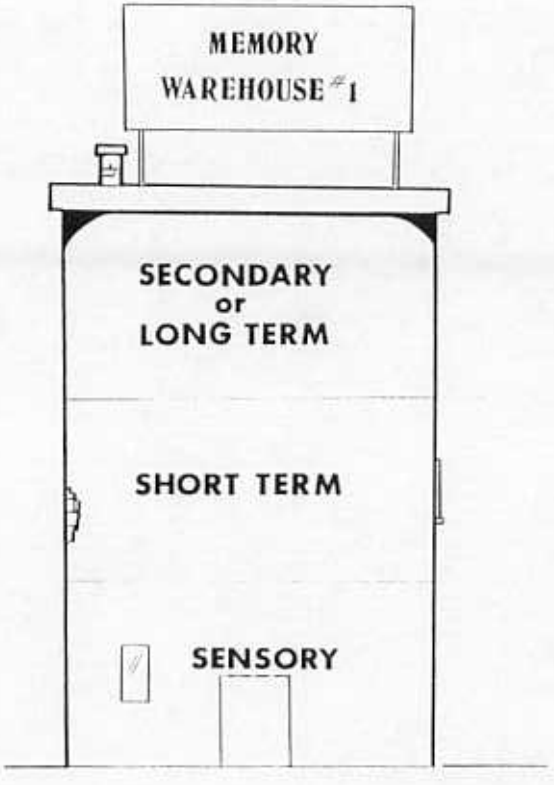


It takes effort to climb the memory level stairs and work to remember what you need to know. The effective use of memory is an active process. The good news is that you can learn new skills to make better use of your memory, and these skills will never leave you. Read on and you will learn how you can apply these skills in managing your own memory resources.



Memory, workload, and common sense fit together. Humans can only process so much information at one point in time. Overconfidence can quickly lead to overload. Everyone has limits and should know what they are. That way they can plan not to exceed them. When an overload occurs, your memory of critical details can break down suddenly. At that point, a withdrawal from your memory "bank" may draw a blank. While you may be very good, avoid overconfidence.

If you use the information in some way after you receive it, then it may reach your short term memory on the second floor. This is the material that you need to store and retrieve in the here and now! This is the information which can make you a star or a turkey.



You can think of memory as a three story warehouse. Each floor has it's own purpose.

Know where to find the information you have not committed to memory. Keep your Sources organized, current, and handy.

Have you ever forgotten something important? We all have and usually the consequences are not too serious.