

Can an A&P Technician be Aliterate and Still be Competent?



Aliterate and Competent?

What's common?

- LEGO set Instructions
- IKEA Instructions
- Egyptian Hieroglyphics
- Maintenance Instructions

What's not common?

Aliterate and Competent?

What's common?

- They all provide information

What's not common?

- Presentation method
 - LEGO Instructions? All pictures
 - IKEA Instructions? All pictures
 - Egyptian Hieroglyphics? More or less figurative
 - Aviation Maintenance Manual? Predominately Text

Aliterate and Competent?

- The point ?
 - LEGO? Children build a complex assembly
 - Not limited to English language
 - IKEA? International-- 45 countries
 - Not limited to English language,
 - Egyptian Hieroglyphics? (3300 BC)
 - More or less figurative
 - AMM?
 - Text, with some charts, diagrams and figures

Aliterate and Competent?

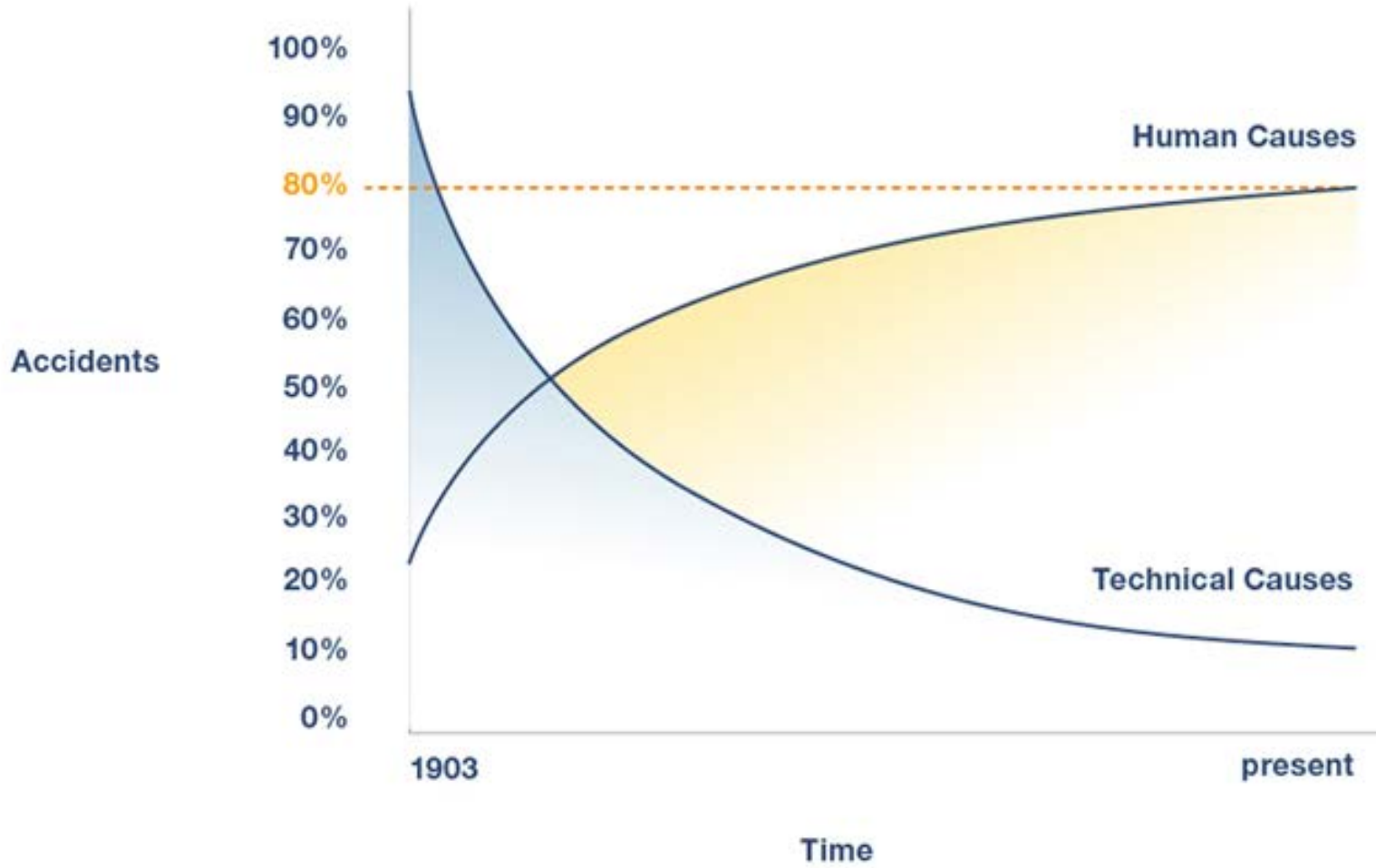
Importance?

1. Primary learning styles :

- Tactile—about 5 %
- Verbal—about 30% (includes talking, reading, hearing)
- Visual—about 65%

2. Both FAA and NTSB have identified that “Failure to follow procedures” is the primary reason for maintenance related errors in aviation.

Accidents In Aviation



12 % are maintenance related

Aliterate and Competent?

Question: If “Failure to Follow Procedures” is such a big issue, and most procedures are developed using text, yet only about 1/3 of the population has “Verbal” as a primary learning style, **WHY do we still do it that way?**

Answer: Because we’ve always done it that way!

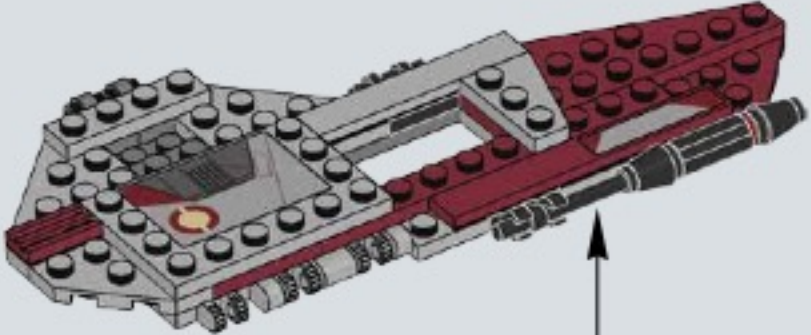
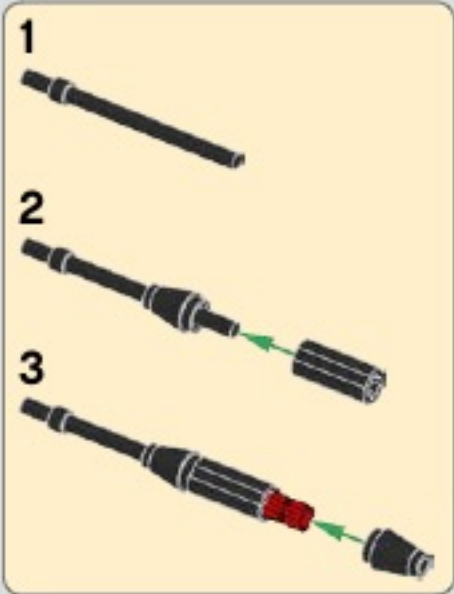


OBI-WAN Jedi Interceptor

"The drawing shows me at one glance what might be spread over ten pages in a book."



49



Aliterate and Competent?

The idea that a picture can convey what might take many words to express was voiced by a character in Ivan S. Turgenev's novel *Fathers and Sons*, 1862:

"The drawing shows me at one glance what might be spread over ten pages in a book."

Aliterate and Competent?



EN	IMPORTANT: Never modify the elements or use other projectiles than provided with this toy.
DE	WICHTIG: Die Elemente dürfen nicht verändert werden. Es dürfen ausschließlich die mit dem Spielzeug mitgelieferten Geschosse verwendet werden.
FR	IMPORTANT : Ne jamais modifier les éléments ni utiliser d'autres projectiles que ceux fournis avec ce jouet.
IT	IMPORTANTE: non modificare gli elementi o utilizzare proiettili non forniti con questo prodotto.
NL	BELANGRIJK: Verander niets aan de elementen en gebruik geen andere projectielen dan de bij het speelgoed geleverde.
ES	IMPORTANTE: No modifique los elementos ni utilice otros proyectiles diferentes a los suministrados junto con este juguete.
DA	VIGTIG: Elementerne må ikke ændres, og der må ikke bruges andre projektiler end dem, der følger med legetøjet.
IS	MIRLVBÆGIT: Aldrei skal breyta einingum vörummar eða nota önnur skot en þau sem fylgja þessu leikfangi.
FI	TÄRKEÄÄ: Älä koskaan tee osiin muutoksia tai käytä lelussa muita kuin sen sisältämää ammuksia.
SV	VIKTIGT: Modifera aldrig delarna och använd aldrig andra projektiler än de som medföljer denna leksak.
NO	VIKTIG: Elementene må ikke endres, og det må aldri brukes andre prosjektiler enn dem som følger med leketøyet.
PT	IMPORTANTE: Nunca modifique os elementos nem utilize projecteis que não tenham sido fornecidos com este brinquedo.
EL	ΠΗΛΑΝΤΗΚΟ: Πονή μπε τροποποιήσε το στοιχίε του παυιδιού κε μπε χρησιμολογήσε άλλε βήλημπε σνέρε, από αυέ που αυνοθέουσε αυτό το παυιδό.
JA	重要: 部品を改造したり、本製品に付属の発射体以外のものを使用しないようにしてください。
ZH	重要提示：切勿更改组件或使用并非由本玩具附带的弹丸。
KO	중요: 이물 부품을 수정하거나 이 부품과 함께 제공된 것이 아닌 발사체는 결코 사용하지 마십시오.
RU	ВАЖНО: Запрещается вносить изменения в элементы или использовать другие снаряды, отличные от тех, которые поставляются с данной игрушкой.
PL	WAŻNE: Nigdy nie modyfikować elementów ani nie używać innych podskoków niż dostarczonych z zabawką.
CZ	UPOZORNĚNÍ: Nikdy neupravujte součástky a nepoužívejte jiné projektily než ty, které jsou dodávány s touto hračkou.
SK	UPOZORNENIE: Nikdy neupravujte súčastičky a nepoužívajte iné projektily než tie, ktoré sú dodávané s touto hračkou.
HU	FŐTARTOS: Az elemeket nem szabad módosítani, és a játékhoz adott lövedékek helyett sem szabad másat használni.
UA	УВАГА: Ніколи не модифікуйте елементи. Використовуйте тільки снаряди, що входять у комплект цієї іграшки.
HR	VAŽNO: Nemojte nikad mijenjati elemente ili koristiti druge projektile osim onih koji bili priloženi uz ovu igračku prilikom kupnje.
SR	VAŽNO: Nemojte da modifikujete elemente i ne koristite druge projektile osim onih koji dolaze uz ovu igračku.
MK	VAŽNO: Nikogad ne menjajte ni elemente ni ne koristite druge projektile osim onih koji su priloženi uz ovu igračku.
SL	POMEMBNO: Nikoli ne spreminjajte elementov in uporabljajte le izstrelke, ki so bili priloženi tej igrači.
RO	IMPORTANT: Nu modificați nicodată elementele și nu utilizați alte proiectile decât cele furnizate cu această jucărie.
BG	ВАЖНО: В никакъв случай не променяйте елементите и не използвайте други снаряди освен предоставените с тази играчка.
LV	SVARBU: Nekad nepārņēidojiet rotāļlietas elementus, vienmēr izmantojiet tikai tie kompleksā leļķuētilē lodītes.
ET	OLULINE: Mänguasja osi ei tohi teistega asendada, kasutada võib ainult kaasasolevat helķķķķ.
LT	SVARBU: Niekadaomet nekeiskite elementų ir naudokite tik tuos šovinius, kurie yra pridėti prie šio žaislo.
TR	ÖNEMLİ: Hiçbir zaman parçalarıda deęişiklik yapmayın veya bu oyuncakla verilenler dışında firasçılar kullanmayın.
AR	ملاحظة مهمة: جنب تعديل العناصر أو استخدام مقذوفات أخرى خالف اللقطة مع هذه اللعبة.
ID	PENTING: Jangan pernah memodifikasi elemen atau menggunakan pelat lain selain yang disediakan bersama mainan ini.
MS	PENTING: Jangan ubah suai elemen atau guna peluncur lain selain daripada yang disediakan untuk alat mainan ini.

An IMPORTANT “NOTE” from the Jedi Interceptor is in 35 different languages!!!

Aliterate and Competent?

Need to know the:

- Requirements to become an A&P
- Meaning of the word Aliterate

Aliterate and Competent?

A&P Requirements

14CFR65 Subpart D requires:

1. Be at least 18 years of age
2. Be able to read, write, speak and understand the English language
3. Have passed all prescribed tests within a period of 24 months

Definition of Aliteracy?

Merriam Webster dictionary:

Noun: The quality or state of being able to read but being uninterested to do so.

Adjective: Aliterate

(The term was first used in 1984 by Daniel Boorstin, Librarian of Congress.)

Aliterate and Competent?

There are two types of Aliteracy

A Functional Aliterate

- Has poor reading skills
- Has no interest in improving
- Has little desire to read for entertainment

A Conditional Aliterate

- Has adequate or even superior reading skills
- Can generally comprehend material presented in technical manuals and work instructions
- **Would prefer less detailed text and more visual references when the pressure is on and their stress is high**

Aliterate and Competent?

Contributing factors to “Aliteracy?”

1. Functional – age related
2. Functional – ESL
3. Conditional – age related (??)
4. Conditional – time pressure/job stress
 - a) Household facilities (ie water leak, heater failure)
 - b) Christmas eve assembly of children's train set!!
 - c) Delivery of customer aircraft or commercial flight

Conditional Aliteracy ??



Photo credit: Photo provided by Vern Berry courtesy of Heritage Maintenance Services.

Aliterate and Competent?

Consider this:

“The technique of Integrated Instruction merges limited text and graphics into a clear, inviting format that helps users work more quickly, easily, safely and accurately.”

Quote from “Developing work instructions for Aliterate Users” paper presented May 19, 2003 to ASQ by Pat Sweeney, The Bishop Company

CONVENTIONAL WORK INSTRUCTIONS

Characteristics:

1. Are typically not used in “formal” training
2. Are often buried in shelf bound binders
3. Frequently require the user to split concentration
4. Are usually convenient and efficient **ONLY** for the one who is developing the document

INTEGRATED WORK INSTRUCTIONS

Characteristics:

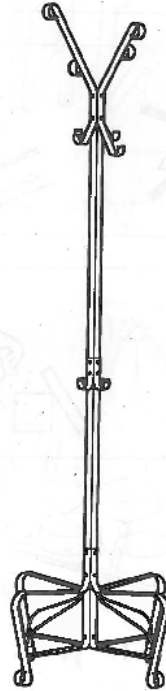
1. Graphics dominate
2. Minimal text
3. Text is integrated with the graphic
4. Resulting in a clear point of focus
5. And a clear sequence of steps
6. No need to split concentration to look for info

INTEGRATED WORK INSTRUCTIONS

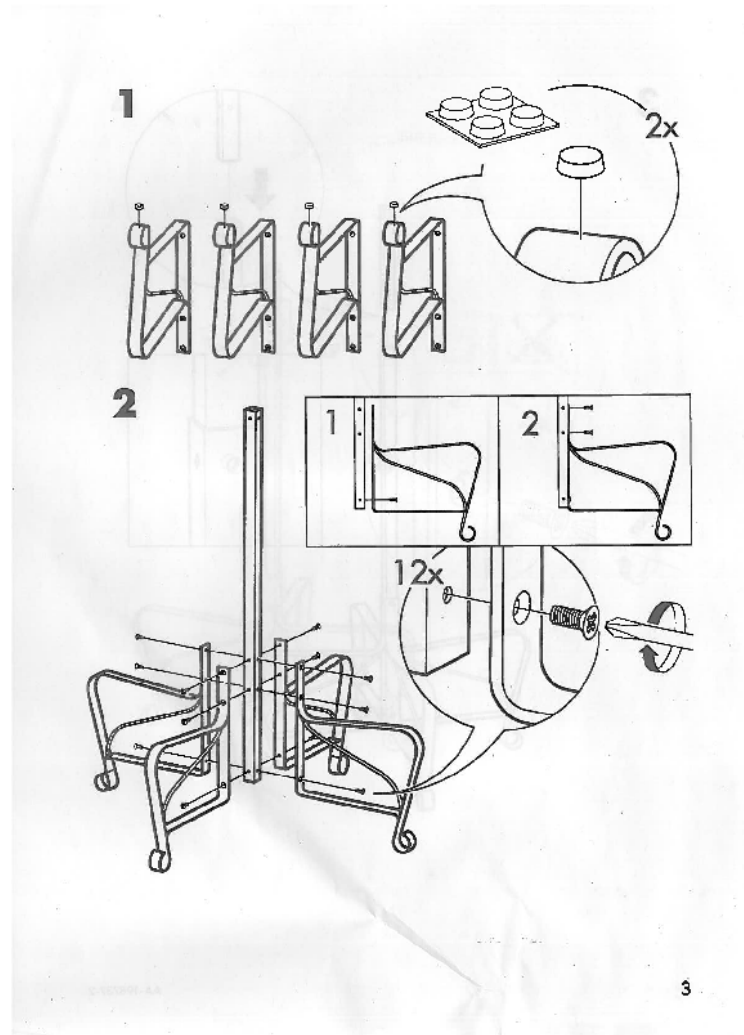
- **IWI reflect the needs of the user** instead of the convenience of the developer
- IWI has easy to grasp graphics as a central focus, with the text (if required) playing a supporting role.

VISUAL WORK INSTRUCTIONS

PORTIS

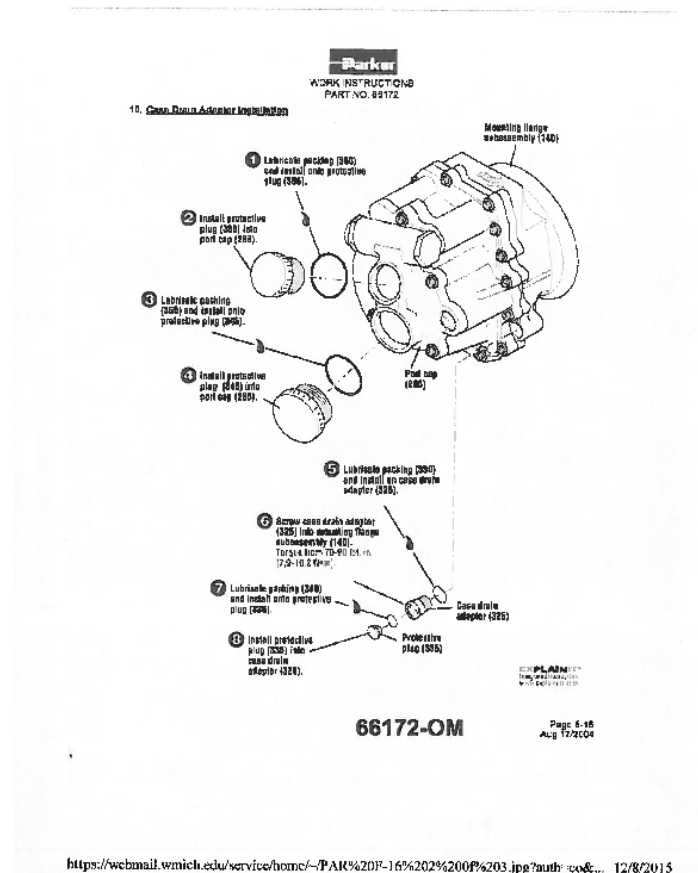


VISUAL WORK INSTRUCTIONS

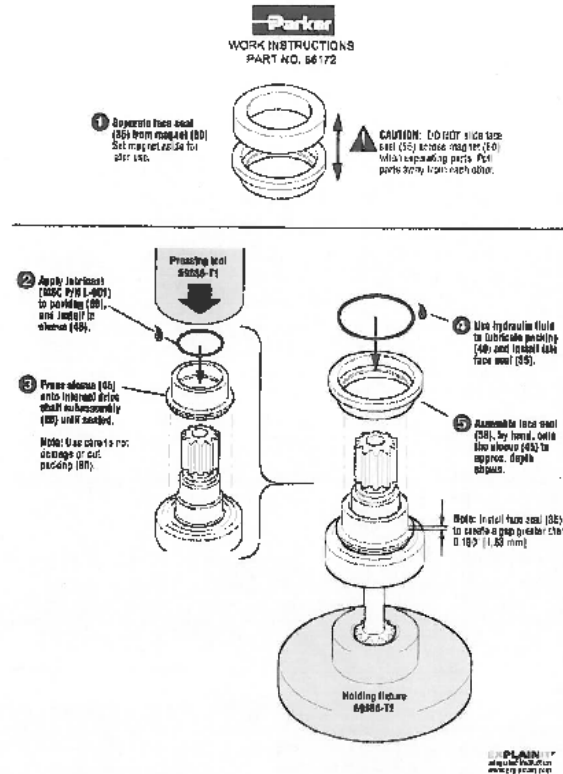


INTEGRATED WORK INSTRUCTIONS

Page 1 of 1



INTEGRATED WORK INSTRUCTIONS



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Page 5-7
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Conventional WI vs. Integrated WI

<https://www.youtube.com/watch?v=RrUTG-CaaZc#t=10>

INTEGRATED WORK INSTRUCTIONS

- Allow faster, more effective worker training
- More clearly identify procedural steps
- Provides easier understanding for low literacy
- Provide easier understanding of non-English users
- Reduce trial-and-error work methods
- More easily isolate problem steps
- Assist in developing improved work methods
- Improve productivity and user safety
- Reduce liability exposure

INTEGRATED WORK INSTRUCTIONS

Benefits of using them

It's all in the PRESENTATION!

<https://www.youtube.com/watch?v=9meJkgMLUlo>

Aliterate and Competent?

- Yes
- No
- It depends
 - On the technician AND the documentation!!

Sincere appreciation to Mr. Pat Sweeney from the Bishop Company and EXPLAINERS for educating me on this very significant approach to presenting technical documentation, and Mr. Vern Berry for granting permission to use the picture of the aviation maintenance facility

