

High Effect Training - References

Introducing The References (in the next update, availability date is inserted here for each reference)

Objective: A sufficient library of references is available to:

- Validate all design criteria in the High Effect training Guidelines, and,
- Provide the trainee with a plentiful supply of source materials to support his or her own choice of learning strategies and exercise designs.

All references are accessed through this site. Some have been discovered by research – reports, etc, on other exercises in improving flight training (eg, the FAA’s “FITS”). Research will also collect applicable academic references. Finally, some materials will be produced during the Project. These documents are described in the following paragraphs.

Learning in Aviation

Objective: Empower the trainee with knowledge.

Learning is the main reference text.

- Expressed in Year 11/12 language, the Booklet revisits (or introduces) general learning theory.
- It then focusses on those aspects specifically applicable to aviation.
- Starting with Thorndike’s *Six Laws*, concepts from Neuroscience are introduced (eg, how learning modifies the neural synapses) to augment insight into the training process.

Learning
Know how it happens

Understanding how learning occurs improves performance on any training course – and the more complex the challenges, the greater the catalytic effect of self-knowledge.

And, yes, it maybe should have started before Year One, but better late than never.

Glossary of Terms and Concepts

Objective: Ensure common understanding of essential terms and concepts.

The Glossary is an essential basis for participation in any learning exercise prompted or influenced by the *High Effect* Project.

- Aviation is especially demanding of precise, unambiguous, communication.
- When scientific principles are deployed in support of learning – and perhaps crew and/or crew-like behaviour – getting the *meaning of the message* right is vital to effect.

Words & Their Meaning
Being pedantic?

Commonly used terms – eg, “subconscious (or unconscious) decision” – must be precisely qualified lest they contaminate the safety effect inherent in critical elements of learning.

When you say you’ve made an *unconscious decision*, what you really mean is that an act of choice took place *below the level of awareness*.

That is, you were *conscious* of a *prompt* for a decision (need to turn off the iron) – or it would not have triggered the action (iron turned off) – *but you were not aware of thinking you needed to take the action, deciding to do it, or doing it*.

The event is not remembered as the prompt lingered so fleetingly in Working Memory that it was not memorised.

That’s why, later – say, while driving to work – you might wonder, did I turn off the iron? (Put out the cat? Close the garage door? etc.)

Checklist – Selecting a Flight School

Objective: Provide the knowledge-empowered trainee with a practical instrument to assist in choosing the preferred place for their flight training investment.

The Checklist is intended as a reference for the intending trainee. However, once the choice has been made it may form a component of the contractual arrangement between service supplier and customer.

Note: Few flight training schools presently have experience with knowledge-empowered trainees turning up at their front door. Both **Learning in Aviation** and **The Checklist** will be essential references for a school to prepare itself – and especially its instructors – for the new reality. In

doing so, of course, they will be improving the quality of their product, so it's an all-round plus. The expectation is that the Lead School will provide instructor induction.

The Safety Institute of Australia (SIA), via the Aviation Safety Foundation of Australasia (ASFA), will accredit the improved safety factor potential aspects of the Checklist.

Flight Training Guidelines

Objective: The intending (or current) student is left in no doubt as to the essential elements of proper flight instruction.

Flying Training expands on the pedagogic principles and arguments set out in **Learning in Aviation**. By way of example only, it describes typical training exercise criteria that exploit High Effect training principles and methods. From one perspective, the student is empowered. From another, he or she is presented with the means to ensure they are as thoroughly prepared for the training course, and for every single activity in the curriculum. Optimum pre-training exercise preparation is essential to receiving peak benefit from *any* training.

Instructor Guidelines

Objective: Instructors are prepared for the (novel) experience of being assigned a student who is not only thoroughly prepared for the training course/session but has clear and legitimate expectations of the standard of instruction relevant to the planned course/exercise.

The Instructor Guide similarly draws on familiarity with reasons-for-doing-it-differently as argued in **Learning in Aviation**, but as seen and used from an instructor viewpoint. The Guide is not an instructor manual as such, but supplemental to such references as the FAA Instructor Handbook and CASA Instructor Manual. (The former is the superior professional reference).

Human Factors Guidelines

Objective: Knowing the particular Human Factors that are involved in learning and flight operations enables the student to be fully prepared for encounters with these phenomena – and be fully able to develop natural attributes to suit piloting demands.

Human Factors in Learning is also supplemental to basic Human Factors manuals. It adds to the foundation supplied by standard texts – especially in the field of *safety competencies* – to ensure that both student and instructors have a clear notion of the expected outcomes in terms of lower error potential.

Particular areas of focus are:

- Situation Awareness.
 - The underlying skills/competencies are described in animated PowerPoint models.
 - The notion of exercising such cognitive competencies is validated by reference to science – to encourage a lifetime commitment to such exercise (at least for the working lifetime).
- Judgement and Decision.
 - Follows on from the Situation Awareness (SA) models with a decision model.
 - The basic argument is that judgement is applied to SA and that a decision prompt may thereby arise.

This is one of the most important segments as it describes the catalysts through which the higher safety factors are to be realised. The materials are designed for self-execution and continuing professional application and commitment. Allied materials point the way to design of “fitness” tests for self-assessment to support/encourage fitness maintenance.

Test SOPs

Objective: Understanding the purpose and nature of test paradigms and protocols not only diminishes any “diagnosis anxiety”, it enables the student to interpret results and to apply them to plan and conduct self-directed exercise programs to ensure the critical underlying cognitive and physical competencies are kept in a fit state.

Self-Assessment paradigms are briefly described with leads given to online opportunities to self-appraise. This segment on testing is aimed at pre-course *am-I-suited-to-be-a-pilot?* Tests and will be distinguished from the above SA fitness appraisals (although there are common elements).

Attributes to be appraised will include reaction time, eye-hand coordination, Situation Awareness skills and stress management.

*The emphasis on self-assessment is **diagnostic** – in contrast to the military pass/fail strategy for their Selection processes. The SOPs will enable the individual to interpret test results and apply the outcomes to their own strategies for learning on the pilot training course.*

*Reference to **Learning in Aviation** will clearly be necessary to complete that exercise.*

Instructor Workshops

Objective: Instructors are introduced to **High Effect** training concepts and theories and thus enabled to develop their understanding further and to craft training exercises accordingly.

Workshops will be conducted as required to ensure a critical mass of trained instructors at the Lead School are able to induct other instructors and monitor their performance.

Interviews

Objective: Face-to-face contact provides the opportunity to further assist the student ensure they are fully prepared for a pilot training course, should they go ahead and undertake it.

Interviews will be conducted (with consent) if school or prospective student so requests. An element of personality profiling will be “scripted” in Interview guidelines, as will check on diligence in accessing and making use of the material on the website.

Safety Management System

Objective: Clear understanding of the purpose and characteristics of a Safety Management System enables the student to ensure that their personal aviation practice develops in harmony with the safety expectations and standards inherent in the overall aviation system.

Safety Management System descriptions (and key indicators of “System health” are set out as benchmarks for assessment to form an opinion of a school’s professionalism and sincere commitment to safety and inducing safety attitudes and competencies constantly through the training regime.

Perhaps more to the point is that this provision is designed to encourage flight schools to adopt a comprehensive SMS and thus ensure all of their clients experience the proper safety culture from the beginning.

Simulator Exercises

Objective: The student is able to plan and conduct his or her own simulator exercises.

Simulator The expectation is that all users of the website will engage in PC-based flight simulator exercises. The rationale for doing that will be spelled out – primarily the US Navy experience – in the hope that such a self-evidently worthy activity should be adopted.

Exercises will be progressively developed and made available. As this activity is an add-on to the Project, the materials available in the early days will be rudimentary – and, of course, in keeping with the strong emphasis on initiative, self-help and cost-minimisation.

Liaison with Industry

Objectives: As a “new style” of pilot emerges from ***High Effect*** courses, the industry needs to be able to take into account any novel characteristics. From a “loop closing” perspective, feedback from the industry will impact on training design or re-design.

Liaison will take place with interested agencies and organisations. The Project embraces contact with the Lead School only. However, as other schools express interest, they will receive visits and support if they are prepared to meet the associated expenses.

Administration

Objective: All administration needed for the Project is completed properly, to a high standard, and with minimum waste of or impact on Project resources and progress.

Administration is clearly a tedious chore scarcely worthy of the high cerebral ratiocination characteristic of this Project – but it will nonetheless get due attention.