

## Darrell Mann "Hands on Systematic Innovation"

### Errata and Q&A (Part 2)

Toru Nakagawa and the Translation Team in Japan, on Oct. 5, 2003

Reply by Darrell Mann, on Nov. 15, 2003

This is a document of errata, questions, and suggestions from the translation team in Japan to the Author and hopefully include the correspondences from the Author. Following are the notes for reading this documents:

- (1) The tables are arranged chapter by chapter and in the increasing order of the place of relevance.
- (2) The errata previously sent to us by the Author on June 20, 2003 are also included here for the sake of consistency and readers' convenience. They are marked at the Answer column as 'Mann June, 2003'.. When it says 'Mann June, 2003 (Brazil)', reflects the correspondences between the Author and the Translator into Portuguese, Mr. Archimedes in Brazil.
- (3) The first column shows: Page, Type, paragraph, and line
  - Page: all refers to the page number in the published version, as was printed on May 2002.
  - Type: E: Error.; obvious error; including the errata shown in June 2003.
  - Q: Question. Including error but being not clear how to change.  
Question concerning to the content.
  - C: Comment.
  - S: Suggestion. Some proposal for improvement.  
Some of them will be adopted in the Japanese version without intending to the modification of the English version.
- Paragraph: Headings and figures are not counted as a paragraph.
  - E.g., 3p represents the 3rd paragraph from the top, while
  - 3pb represents the 3rd paragraph from the bottom of the page.
  - Fig. or Table represents the figure or table in the page.
- Line: Line number in the paragraph, usually counted from the top,
  - whereas line number counted from the bottom is shown as, say, 3b.
  - h: represents the heading which leads the paragraph.
- (4) The second column ('Is') shows the text at present.
  - The text is shown in black, while some part is shown in blue for your focus.
  - Some explanation is shown in [ ] in green.
- (5) The third column ('Has to be') shows the (proposed) corrected text and various comments.
  - The text itself is shown in black, while the corrected part is shown in blue.
  - Various comments and explanations are shown in [ ] in green.

Our Japanese translation version is trying to be as correct as possible to the original texts. Some points of changes will be made without listing up in this document explicitly as follows::

- (6) In the Japanese version, all the headings will be numbered in a hierarchical way.
  - This numbering is not shown in this document. They will appear in the enhanced table of contents some time later.
- (7) For emphasizing words and phrases, various ways are used in the original text (sometimes not in a consistent way). In the Japanese version we will try to reflect most of them but not all because the styles of expressing emphases are often different.
- (8) Layout of some parts (especially, some itemized parts) will be changed slightly.
- (9) Some words or phrases are inserted for brief additional explanation in [ ].

## Chapter 12

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
233, QS 2p; 1	simple and yet, for many, <b>non-instinctive</b> .	simple and yet, for many, <b>non-intuitive</b> .	okay
234, S 1p, 1	The next thing, <b>then</b> that we need to examine	The next thing, <b>then</b> , that we need to examine [Insert a comma.]	okay
235, E 1p, 2-1b	it may be that all <b>three</b> will have	it may be that all four will have	[Mann June 2003]
235, QS 1p, 1b	will have to be <b>evaluated</b>	will have to be <b>examined</b>	okay
235, QS 4p, 1-2	Having defined what the function the system under evaluation is required to achieve is and have drawn the s-field model	Having defined what the function the system under evaluation is required to achieve <b>is</b> , and <b>having</b> drawn the s-field model	[Mann June 2003]
		Having defined <b>what function the system under consideration requires to achieve</b> , and <b>having</b> drawn the s-field model	[Nakagawa's suggestion] okay
235, QS 1pb; 1b	If the answer to this <b>first</b> question has been yes,	If the answer to this <b>second</b> question has been yes,	first is correct
236, S 3p; 1	the s-field model might <b>also include</b> insufficient or excessive relationships.	the s-field model might <b>include not only harmful but also</b> insufficient or excessive relationships.	okay
236, QS 3p; 3	<b>(note</b> however, that	<b>(note</b> , however, that [Insert a comma.]	okay
236, QS 3p, 4	– e.g. via the recommendations contained in Chapter 9, then	– e.g. via the recommendations contained in Chapter 9, – then [Insert a dash.]	okay
236, S Table, h	Table 12.1: Types of Field [Title is placed at the bottom of the table.]	Table 12.1: Types of Field [Title is placed at the top of the table.]	Convention is to place title under table
237, CS Table	[Various Field categories are written with nouns or adjectives, seemingly without any rule.]	[The following footnote is inserted at the bottom of the table.] 'Fields' not only have various types as shown in this table, but also appear in various ways. For example, the gravitational 'Field' appear as gravitational force, gravitational acceleration, field of gravity, gravitational potential energy, etc. and causes a variety of physical effects. The concept of 'Field' contain all	okay

		these range of types and appearances. In this context, all the items in the table above are expressed in adjective forms [in Japanese edition].	
237, QS 2pb; 3	Sotsialisticheskaya <b>industriya</b> , and found in Reference 17.3 involving	Sotsialisticheskaya <b>industriya</b> and found in Reference 17.3, involving [Shift the position of the comma.]	okay
238, QS 4p; 1	the <b>instinctive</b> answer is	the <b>intuitive</b> answer is	okay
238, QS 4p; 6b	to the chapter on resources (14)	to the chapter on resources (Chapter 14)	okay
238, Q 1pb; 1-2	in industrial sized plants	[Does this mean 'in industrial scale plants?']	yes
239, E Fig	[In the third box:] A good way of <b>doing</b> achieving	A good way of achieving	okay
239, E 1p; 1	We have <b>already</b> seen this problem	We have <b>already</b> seen this problem	Corrected in 2 <sup>nd</sup> printing
239, E 2p; 1-2	the first thing we need to do with this problem is <b>defined</b> the function	the first thing we need to do with this problem is <b>define</b> the function	[Mann June 2003]
		the first thing we need to do with this problem is <b>to define</b> the function	Both are acceptable forms of English
242, QS 2p; 3-4	we should look to the standards relating to <b>first</b> modification of substances.	we should look <b>first</b> to the standards relating to modification of substances.	okay
243, E 1p; 1	Any such system, if it is to deliver the <b>function</b> must	Any such system, if it is to deliver the <b>function</b> , must [Insert a comma.]	okay
244, E 2p; 1-2	which of the <b>three</b> main categories	which of the <b>four</b> main categories	[Mann June 2003]
244, QS 2p; 4	high <b>amount</b> of change to the existing system	high <b>degree</b> of change to the existing system	Okay
245, S 1p; 5b	requires a field (e.g. ferrofluid)	requires a field (e.g. <b>magnetic field with</b> ferrofluid)	Okay
246, Q 2p; 3	<b>Shadow-graph</b> inspection method	[Does this mean: X-ray photograph inspection method for health, etc?]	No; shadowgraph is an inspection method in which an object is placed in front of a light-source and the resulting shadow is inspected.
250, S 3p; 3-5	Material composition can be more precisely identified by measuring the spectrum of the resonant frequency of electrons in response to changing frequencies of a <b>magnetic field</b> .	Material composition can be more precisely identified by measuring the spectrum of the resonant frequency of <b>nuclei</b> (e.g. hydrogen nuclei) placed in a <b>magnetic field</b> in response to changing frequencies of <b>radio wave</b> , etc. (i.e. NMR)	Nice, okay

250, E 3pb; 3b	removal of clogged or <b>blacked</b> contents	removal of clogged or <b>blocked</b> contents	Corrected in 2 <sup>nd</sup> printing
251, QS 1pb; 2	protected from <b>frost damage caused by</b> ground stress	protected from <b>damage caused by frozen</b> ground stress	protected from <b>damage caused by frost-generated ground stress</b>
252, QS 4pb; 2b	Include a foam matrix within a tank of rocket fuel acts to <b>absorb</b> explosions	Include a foam matrix within a tank of rocket fuel acts to <b>prevent</b> explosions	The foam does not 'prevent' – it prevents the spread not the explosion itself – hence 'absorb'
252, QS 3pb; 4	Bio- <b>grade</b> trigger materials	Bio- <b>degrade</b> trigger materials	okay
253, Q 1p; 2	otherwise difficult to <b>lodge</b> egg	[What is the meaning of the word 'lodge'?]	Use 'remove' as in 'difficult to remove'
253, E 2p; 3	Barometer records drop ... [Printed in smaller fonts and with more indentation.]	[Print in the normal way.]	Corrected in 2 <sup>nd</sup> print
253, E 2p; 2b	heats home without (apparent!) and eliminates	heats home without (apparent!) <b>adverse affects</b> and eliminates	[Mann June 2003] corrected in 2 <sup>nd</sup> print
253, S 1pb; 3	causes warpage on <b>release</b> , control of	causes warpage on <b>release</b> ; control of [Replace a comma with a semi-colon.]	Okay
254, Q 3p; 2b	Digesting bacteria remove harmful chemicals/waste products/etc	[Does this talk about the situation inside human/animal body or in waste processing facilities? or both?]	Both, but I was primarily thinking about waste processing facilities
254, Q 3p; 1b	kills potentially harmful <b>oozysts</b> in drinking water	[What is the meaning of the word 'oozysts'?]	Biological term for larvae phase of a small bug
255, Q 1pb; 2b	Combine high and low <b>emissivity</b> surfaces	[How about using the word 'reflective' or 'absorbing' in place of 'emissivity'?]	okay
257, E 1pb; 1b	and on to completely flexible <b>structures</b>	and on to completely flexible <b>structures</b> )	[Mann June 2003] okay
258, QS 2p; 1	Make use of 'transformable' <b>elements</b> of substances	Make use of 'transformable' <b>properties</b> of substances	okay
258, QS 3p; 4b	Laser <b>shock</b> peening hardens material surface	Laser <b>shot</b> peening hardens material surface	okay
260, S 1pb; 4-3b	and the <b>environment</b> of the device being protected <b>is neutral</b> .	and the <b>lighting rod is neutral for</b> the device being protected.	okay
261, E 3pb; 1b	<b>Uses</b> mirrors to <b>multiple</b> light in a room	<b>Use</b> mirrors to <b>multiply</b> light in a room	[Mann June 2003] corrected in 2 <sup>nd</sup> print
261, QS 2pb; 3-2b	combustion products into and out of cylinder of <b>IC</b> engine	combustion products into and out of cylinder of <b>internal combustion</b> engine	okay
262, QS 2pb; 5b	Polyorganosiloxane prevents insect debris from sticking to a <b>surface</b>	[Q: What kind of 'surface' is this talking about?]	Aerospace insect repellent surface chemistry – for wings, windshields, etc
263, E 3p; 2	environment (which may be <b>temporary</b> in either of the substances	environment (which may be <b>temporary</b> ) in either of the substances	[Mann June 2003] okay
263; E 1pb; 1	(e.g. maximum in one place, minimum in <b>another</b> ), and	(e.g. maximum in one place, minimum in <b>another</b> ) and	[Mann June 2003] okay

		[Delete a comma.]	
264; QS 2p; 1	is <b>required</b> , and the field is sometimes <b>insufficient</b> and	is <b>required</b> and the field is sometimes <b>insufficient</b> , add [Move the position of a comma.]	okay
264; E 2p; 3-2b	(Use thermochromic ink .... different effects) [This sentence is itemized.]	(Use thermochromic ink .... different effects) [Move this sentence as a note to the preceding item.]	Keep it as a separate item preferably – possibly delete the parentheses
265; Q 2pb; 5b	Ditto other bio- <b>sorbable</b> materials	Ditto other bio- <b>dissolvable</b> materials	Bio- <b>sorbable</b> is the correct word; not the same meaning as <b>dissolvable</b> – in bio- <b>desorbable</b> , the material is absorbed into the body
266; Q 1p; 3	Clockwork <b>radio</b> (uses human power)	Clockwork <b>clock</b> (uses human power) [Q: Is radio a good example?]	Clockwork <b>radio</b> is a good example in the UK as a very famous inventor has one on the market. Change if you need to, or call it ‘clockwork systems (e.g. clock, radio, etc)
267; Q 1p; 5	<b>Voice sensitive mobile phone</b> (addition of microphone and audio field)	[Q: What does this mean? Voice control?]	Means the microphone compensates automatically for different noise levels. Also phones that use speech recognition to convey commands

## Chapter 13

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
273, E 2pb; 1b	this <b>apparently simple</b> picture:-	this picture:	[Mann June 2003] ‘relatively simple’ in 2 <sup>nd</sup> print
274, QS 1p; 4	and so <b>on</b> ) so certain systems	and so <b>on</b> ); so certain systems [Insert a semicolon.]	okay
274, S 1pb, 1	Having made the <b>connection between handle=monolithic and bristle=monolithic,</b>	Having made the <b>connections that handle = monolithic and that bristle = monolithic,</b>	okay
276, E 1pb; 4-3b	evolve in the <b>ay</b> the they do.	evolve in the <b>way</b> the they do.	[Mann June 2003] corrected in 2 <sup>nd</sup> print
277, QS 2p; 1b	before we start to actually use the trends in <b>anger</b> .	before we start to actually use the trends in <b>eager</b> .	<b>Anger</b> is the British expression. Alternative would be ‘earnest’
278, E 2p; 3	power generated (higher number of blades has	power generated (higher number of blades) has	[Mann June 2003] corrected in 2 <sup>nd</sup> print
278, E 2pb; 3b	– progressively making better and better use of resources, they learn	– progressively making better and better use of <b>resources</b> – they learn [Replace a comma with a dash.]	[Mann June 2003] okay

279, E 3pb; 2	(whether it be our own of one belonging to a competitor)	(whether it be our own or one belonging to a competitor)	okay
282, QS 1p; 3-1b	The space segmentation spoke on the radar plot the shaded area boundary for the chosen invention however will be drawn	On the space segmentation spoke on the radar plot, the shaded area boundary for the chosen invention consequently will be drawn	okay
282, QS 2p; 3-4	offer benefits over the current hollow design?	offer benefits over the current solid design?	okay
282, Q 1pb; 2-3	This trend defines increasing benefits to be gained by evolving smooth surfaces into 2D and 3D surfaces.	[The words 2D/3D surfaces seem not clear in their meanings.]	Into surfaces roughened in first 2-D 'ribes' and then 3-dimensional protrusions and depressions.
283, E 3p; 2	design – like the majority of other mechanical designs has	design – like the majority of other mechanical designs – has [Insert a dash.]	Corrected in 2 <sup>nd</sup> print
283, E 1pb; 2-1b	untapped potential in the design, and therefore that there are consequently significant improvements that we be developed.	untapped potential, and therefore that there are significant improvements that can be developed.	[Mann June 2003] corrected in 2 <sup>nd</sup> print
284, E Fig	[In the figure caption:] (NB: all plots have been show with	(NB: all plots have been shown with	okay
284, E 3pb; 3	within the bearing – but does have	within the bearing – do have	[Mann June 2003] corrected in 2 <sup>nd</sup> print
284, QS 3pb, 1b	when those individual balls begin to interact	when those individual components begin to interact	Balls is better
285, E 2pb, 4b	This, of course is the difference	This, of course, is the difference [Insert a comma.]	okay
286, Q 2p; 1	In this section, if we put aside all the human issues	In this section, when we put aside all the human issues	okay
286, QS 2p; 4b	such as computer hard-drives,	such as computer hard-disk drives,	okay
290, QS 2p; 1	The TRIZ 'Dynamization' (see final section of this chapter) trend in other words,	The TRIZ 'Dynamization' (see final section of this chapter), trend in other words, [Insert a comma.]	Would be better as 'The TRIZ Dynamization trend (see final section of this chapter), in other words..'
291, QS 1pb; 1-2	the performance capabilities of the hydraulic systems, after which point	the performance capabilities of the hydraulic systems; after which point [Replace a comma with a semi-colon.]	Okay
293, QS 2p; 2-3	problem into a generic one, locating the general solution and then translating the general solution into a specific solution	problem into a generic one, locating the generic solution and then translating the generic solution into a specific solution	Prefer 'general' as is in the current version – otherwise too many uses of 'generic' in the sentence
293, QS 3pb; 2	specific system under evaluation	specific system under consideration	okay
293, QS 3pb; 5-6	the specific-generic transition only has to be	the specific-generic connection only has to be done once.	Prefer 'transition' as is in the current version. If you use

	done once.		connection then it should read ‘..connection only has to be made once’
294, E 2p; 2b	the use of <b>water-et</b> cutters	the use of <b>water-jet</b> cutters	okay
295, E 3p; 2b	another function as <b>ell</b> as 'enhance cutting'	another function as <b>well</b> as 'enhance cutting'	Corrected in 2 <sup>nd</sup> print
295, S 4p; 2b	from the lawn example,	from the lawn <b>mower</b> example,	Okay
295, S 1pb; 4	<b>Figure 13.25</b> indicates	<b>Table 13.1</b> indicates [The figure actually is a table.]	okay
296, CS Fig. title	<b>Figure 13.25:</b> Example of M-B-P Combination Possibilities [This title is place at the bottom of the figure.]	<b>Table 13.1:</b> Example of M-B-P Combination Possibilities [The title is placed at the top of the table.]	Convention used elsewhere is title at the bottom
297, CS 2p; 1	Figure <b>13.26</b> illustrates key stages	Figure <b>13.25</b> illustrates key stages	okay
297, CS Fig.	Figure 13.26: Partial Evolution History of the Bicycle	Figure <b>13.25:</b> Partial Evolution History of the Bicycle	okay
297, CS 3p; 2-1b	Table <b>13.1</b> below describes	Table <b>13.2</b> below describes	okay
297, QS Table	[Left column, corresponding to 1870:] Conflict - more effort required to turn <b>wheel</b>	Conflict - more effort required to turn <b>wheel</b> ; [Insert a semi-colon]	okay
297, QS Table	[Right column:] 1888 -pneumatic tyre introduced; speed	1888 -pneumatic tyre introduced; speed <b>increasing</b>	okay
297, CS Table, h	Table <b>13.1:</b> Evolution of the Bicycle [Title is placed at the bottom of the table.]	Table <b>13.2:</b> Evolution of the Bicycle [Place this at the top of the table.]	Convention is bottom
298, Q 2p; 4	the ideality of the various constituent parts was often doing anything <b>but</b> .	[Q: Some words are missing after 'but'.]	This is the correct form of English. No correction required.
298, CS 3p; 2	think about cutlery (Figure <b>13.27</b> ).	think about cutlery (Figure <b>13.26</b> ).	okay
298, CS Fig. h	Figure <b>13.27:</b> Influence of Fork Evolution on Knife Evolution	Figure <b>13.26:</b> Influence of Fork Evolution on Knife Evolution	okay
298, E 1pb; 3-2b	It also, in keeping with the theme of Petroski's <b>book</b> illustrates	It also, in keeping with the theme of Petroski's <b>book</b> , illustrates [Insert a comma.]	Okay
298, QS 1pb; 2b	his belief that the <b>principle</b> driver of evolution	his belief that the <b>principal</b> driver of evolution	okay
299, Q 1p; 1-5	The main point emerging from the Law of Non-Uniform Evolution is <b>that</b> we need to .....	The main point emerging from the Law of Non-Uniform Evolution is we need to ..... [Q: This sentence is difficult to understand what the Author	The main point emerging from the Law of Non-Uniform evolution is that we need to be very careful when conducting a

		want to say. The Author's correction in June 2003 seems not helpful. This sentence need to be divided into shorter ones.]	trend analysis of a system. This is particularly so when we are looking at a system from several hierarchical perspectives, and take into account the fact that an increase in ideality at one level may necessitate a decrease in ideality at a lower level. The overall direction of evolution is driven by the increasing ideality....
299, E 3p; 3-2b	that eventually the allure of increased ideality eventually triumphs.	that eventually the allure of increased ideality triumphs.	okay
299, E 2pb; 3	generated still one which is	generated still being one which is	[Mann June 2003] corrected in 2 <sup>nd</sup> print
300, S 3p; 3	involves the basic trend being presented across the top of the page.	involves the basic sequence of stages of the trend being presented across the top of the page.	okay
300, CS 1pb; 2-3	Figure 13.28 shows	Figure 13.27 shows	okay
300, QS 1pb; 3b	the system being evaluated involves	the system being examined involves	okay
301, CS Fig.; h	Figure 13.28: Clustering of Technology Evolution Trends	Figure 13.27: Clustering of Technology Evolution Trends	Okay
301, QE 2p; 2	– there are 30 different trends, interpretable in a total of 35 ways.	– there are 31 different trends, interpretable in a total of 35 ways.	okay
301, QE 2p; 3	for each of the 30 individual trends.	for each of the 31 individual trends.	okay
303, QS Table; Box2R	- make simple measurements-	- make measurements simple	Make simple measurements is correct
307, Q 2pb; 1-2	It features major shifts from solid to liquid to gas to field states.	[Q: You use two words 'fluid' and 'liquid' in this trend. How do you distinguish them and why do you use them both? - It is worthy of adding a footnote.]	Change all 'liquid' into 'fluid' to achieve consistency
308, QS Ex; 1-2	nano-tube material fibre inserts, micro-motors,	nano-tube material, fibre inserts, micro-motors, [Insert a comma.]	No comma – text is correct as is
311, QS Ex; 1-2	– clothing, hand-grips, scissors, oven gloves, poke yoke assembly forms,	– clothing, hand-grips, scissors, oven gloves –, 'poke yoke' assembly forms,	okay
313, Q title	Geometric Evolution (Linear)	[Q: The word 'linear' in this context is difficult to explain. What does it mean in contrast to the 'volumetric' ?]	Context is lines rather than solid models
315, S	[The trend sequences are:]	Immobile System -->	Okay (graphic doesn't fit if



Fig	Immobile System --> Jointed System --> Fully Flexible System ...	Jointed System --> Multiple Jointed System --> Fully Flexible System ...	the extra box is added – hence the least important one was deleted)
315, Q Ex., 2	medical stent,	[Q: What is the meaning of 'stent'? What is medical stent?]	This is the correct medical term for a device that unblocks arteries in an angioplasty operation
317, E Notes; 1b	many examples of this trend in action.	many examples of this trend having taken place.	[Mann June 2003] correct in 2 <sup>nd</sup> print
319, E Table	[In 2 <sup>nd</sup> row right column:] Any stage to the Next	All the same	[Mann June 2003] correct in 2 <sup>nd</sup> print
319, QS Notes; 1	that a point is reached, beyond which it is no longer possible to	that there exists a point, beyond which it is no longer possible to	okay
319, Q Notes; 1b	Applies to both time and interface issues.	[Q: How this trend is related to the time issue? I feel it more related to space.]	Time = periods or multiple similar activities, Interfaces – teeth on a comb are necessary because of interface with hair
321, QS Ex.; 1-2	(negative components = (e.g. nail-puller on hammer),	(negative components = nail-puller on hammer),	okay
321, S Notes; 2-1b	The timing of these jumps to negative is difficult	The timing of these jumps to 'negative' is difficult	okay
321, S Notes; 1b	negative thing, if it doesn't already exist is unknown	negative thing, if it doesn't already exist, is unknown [Insert a comma.]	okay
323, E Table	[In 2 <sup>nd</sup> row right column:] Any stage to the Next	All the same	[Mann June 2003] correct in 2 <sup>nd</sup> print
323, E Notes; 2	relates only to the number of trends incorporated	relates only to the number of senses incorporated	okay
325, E Notes;1- 2	by S. Dewulf and reported in TRIZ Journal, June 2002.	by S. Dewulf and reported in Imperial College PhD thesis.	okay
325, QS Notes; 1b	is a long sought after goal.	is a long sought-after goal. [Insert a hyphen.]	okay
327, QS Notes; 5	– and the idea that things over time	– and the idea that over time	okay
329, S Fig	[The third axis is drawn in a thin dotted line.]	[The axis should be drawn thicker.]	okay
330, E Table	[In 2 <sup>nd</sup> row right column:] Complex to Elimination of components	All the same	[Mann June 2003] correct in 2 <sup>nd</sup> print
332, E Table	[In 2 <sup>nd</sup> row right column:] Any stage to the Next	All the same	[Mann June 2003] correct in 2 <sup>nd</sup> print
333, E Ex.; 2-3	in terms of 'if anything can go wrong, it will go wrong design philosophy	in terms of 'if anything can go wrong, it will go wrong' design philosophy [Insert a comma.]	[Mann June 2003] okay
333, E Notes;	axle of a car, for example, at one time as thought to be	axle of a car, for example, at one time was thought to be	okay

11			
333, E Notes; 7b	of one <b>ill</b> not impact on	of one <b>will</b> not impact on	[Mann June 2003] correct in 2 <sup>nd</sup> print
334, E Table	[In 2 <sup>nd</sup> row right column:] <b>Any stage to the Next</b>	<b>All the same</b>	[Mann June 2003] correct in 2 <sup>nd</sup> print
334, S Notes; 2	increasing moves towards of wind,	increasing moves towards <b>use</b> of wind,	correct in 2 <sup>nd</sup> print

## Chapter 14

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
335, E Op; 1	as a towel <b>horse</b> ?	as a towel <b>horse</b> ?" [Insert a double quote.]	okay
336, QS 1p; 2	the system you are <b>evaluating</b> .	the system you are <b>considering</b> .	okay
336, S 3p; 4	<b>Transforming/Modifying Substances</b>	<b>Special Properties/Modifications of Resources</b> [So as to match with the subtitle below.]	okay
336, S 3p; 5	<b>Manufacturing Resources</b>	[Delete this line and insert the following between lines 2 and 3:] <b>Manufacture Process Type Resources</b>	okay
336, S 5p; h	Resources in the Environment [This heading is printed with larger fonts.]	[Reduce the font size by one rank.]	okay
336, S 1pb; 3b	Velocity	Velocity (m/s)	okay
338, Q Table	[In the bottom row, right column; line 3:] Alkylation – oxygen, nitrogen	[Q: What do you want to say about oxygen and nitrogen?]	Either oxygen or nitrogen can be used in al alkylation process – no change required
338, Q Table	[In the bottom row, right column; line 4b:] Lithiation (BuLi, <b>LDA</b> )	Lithiation (BuLi, <b>LAD</b> ) [Does this mean Lithium Aluminium Deuteride?]	You are correct, change accordingly
339, Q Table	[Top table, right column, line 2:] Phosphorylation, <b>Phosgenation</b>	[Q: What is phosgenation?]	Chemical process used in agro-chemical sector – no change required
340, E Table	[Bottom table, 2 <sup>nd</sup> row, right column:] (Reference 14.5)	(Reference 14.6)	correct in 2 <sup>nd</sup> print
342, E 6p; 3	Chapter 17, it can <b>be</b> become a useful resource	Chapter 17, it can become a useful resource	Okay

## Chapter 15

Page	Is	Has to be	Answer
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Type Parag. Line		(Question/Comment)	
346, QS Table	[The table in starting in page 346 does not have a title.]	Table 15.1 .... [Please specify the title of this table.]	The 'Table' continues for several pages and so we decided that a label is confusing. If you wish to add a title, it will be 'Function Database'. The English edition will not have a title for this table.
346, QS Table	[Detailed items in this table are sometimes separated with commas but often not, and in some cases one item is shown in two lines without any explicit marks.]	[Please use itemization marks explicitly, or else use commas consistently all the time.] [There could be many cases where reader's understanding might not be correct.]	Commas should be removed.
351, QS Table	[The table in starting in page 351 does not have a title.]	Table 15.2 .... [Please specify the title of this table.]	The 'Table' continues for several pages and so we decided that a label is confusing. If you wish to add a title, it will be 'Attributes Database'. The English edition will not have a title for this table.
354, E 4pb; 2-1b	(e.g. aerosol nozzle ® produce spray/mist ® mist/droplets/particles)	(e.g. aerosol nozzle → produce spray/mist → mist/droplets/particles)	[Mann June 2003] correct in 2 <sup>nd</sup> print
355, E 3pb-2pb	[These two paragraphs are indented about 10 mm.]	[No indentation.]	Correct as is

## Chapter 16

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
358, QS 2pb; 3b	of the overall system under <b>evaluation</b>	of the overall system under <b>consideration</b>	okay
358, E 1pb; 1	For the <b>selected</b> key problem functional relationship selected in the previous step,	For the key problem functional relationship selected in the previous step,	okay
359, QS 1p, 5-7	the time when the conflict is occurring (to define <b>one boundary</b> of our time-window) <b>and</b> the time immediately before the problem occurs, <b>or</b> (less likely, but by no means impossible) immediately after it has disappeared.	the time when the conflict is occurring <b>and</b> (to define <b>boundaries</b> of our time-window) the time immediately before the problem occurs <b>and</b> (less likely, but by no means impossible) <b>the time</b> immediately after it has disappeared.	Correct as is
359, QS 2p; 2	think about the negative functional relationship	think about the negative functional relationship under	okay

	under <b>evaluation</b>	<b>consideration</b>	
359, Q 2pb; 4-5	– <b>if only because</b> the idea of 'wanting the MUF and not wanting the MUF' or rather the 'not wanting' part of the contradiction, <b>is often meaningless.</b>	[Q: I cannot understand the meaning of this sentence (in English?) and the logic. Could you rephrase it for non-native English readers?]	...if only because configuring the contradiction around 'not wanting the Main Useful Function' is meaningless.
359, QS 2pb; 3b	–A is taken to represent the opposite <b>function</b> to A	–A is taken to represent the opposite <b>property</b> to A	okay
360, QS 1p; 2-1b	the x-component is able to <b>eliminate the harmful function B</b>	[To cover the full range of a negative functional relationship, how about adding as follows.] the x-component is able to <b>eliminate the harmful function B (or make the insufficient function sufficient, or make the excessive function appropriate)</b>	okay
360, E 1p; 1b	to solve the physical <b>contradiction, C'.</b>	to solve the physical contradiction C'. [Delete a comma.]	okay
360, QS 2p; 7	to the specification <b>outlined</b> in step f).	to the specification <b>obtained</b> in step f).	okay
361, E 3p; 4	resources are detailed in the trigger sheet in Chapter <b>9,</b>	resources are detailed in the trigger sheet in Chapter <b>14,</b>	okay
362, E 2pb; 1	the whole community of <b>exerts</b>	the whole community of <b>experts</b>	okay
363, E 3p; 2-1b	This 'increase lift' thus forms the bases	This 'increase lift' <b>requirement</b> thus forms the bases	[Mann June 2003] correct in 2 <sup>nd</sup> print
364, QS 1pb; 2-4	The most obvious conflict (...), <b>the one</b> most likely to hazard our ability to achieve <b>lift</b> appears	The most obvious conflict (...), <b>which is the one</b> most likely to hazard our ability to achieve <b>lift,</b> appears	Text is okay as is, but add a comma between lift and appears
365, QS 4p; 1-2	to eliminate the <b>harmful</b> function 'insufficient lift'	to eliminate the <b>negative</b> function 'insufficient lift'	okay
367, E 4p; 4-3b	(for example <b>is</b> step b)	(for example <b>in</b> step b)	Okay

## Chapter 17

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
369, QS 1p; 1-2	is one of the conceptually <b>more</b> simple of the TRIZ tools	is one of the conceptually <b>most</b> simple of the TRIZ tools	okay
369, E 3p; 4	it is a simplification <b>than</b> filters-out rather than distills	it is a simplification <b>that</b> filters-out rather than distills	okay
369, ES 3pb; 3	decide which components are potential candidates <b>from</b> trimming,	decide which components are potential candidates <b>for</b> trimming,	okay
369, CS	questions are illustrated in	questions are illustrated in	okay

1pb, 1b	Figure 17.1 below.	Table 17.1 below.	
370, CS Fig	Figure 17.1: Combined TRIZ/DFMA Trimming Questions	Table 17.1: Combined TRIZ/DFMA Trimming Questions [In this table the questions are labeled as a, b, ... and are used in the headings of the subsequent explanations.]	We will leave the text as is
370, CS 2p; h	Do I need the Function?	a. Do I need the Function? [Insert the label of the question. To be the same in the subsequent headings.]	We will leave the text as is
370, QS 2p; 2-3	all of the functional connections ... (i.e. all of the 'useful' arrows	all of the functional connections ... (especially, all of the 'useful' arrows	Text is correct as is
370, CS 2p; 4	– see illustration below)	– see Figure 17.1)	okay
370, CS illust.	[No figure caption for the illustration.]	Figure 17.1: Functions related to the part under trimming consideration [Please specify a better title.]	Okay Important Function Relationships When Considering Trimming A Component
370, E 3pb; 2b	–in many instances, they are	– in many instances they are [Insert a space after the dash.] [Delete a comma.]	okay [Mann June 2003] correct in 2 <sup>nd</sup> print
370, E 2pb; 5-6	If the FAA model has been drawn in a hierarchical manner (see Chapter 6, section 3),	If the FAA model has been drawn in a hierarchical manner (see Chapter 6, section 4),	okay
370, E 2pb; 3-2b	Experience suggests, that if an answer exists, it will tend	Experience suggests that if an answer exists it will tend [Delete two commas.]	[Mann June 2003] correct in 2 <sup>nd</sup> print
371, QS 4p; 2	that can help deliver the function.	that can help deliver the function?	okay
371, QS 2pb; 2b	because either the need for maintenance disappears	because the need for maintenance disappears	okay
371, QS 1pb; 2b	What can be determined is that	What can be suggested is that	okay
372, QS 3pb; 4-3b	– and thus the reason that the design featured in the chapter on eliminating contradictions.	– and thus the reason that the design featured in the chapter focuses on eliminating contradictions.	okay
372, E 2pb; 3	On company recently took	One company recently took	[Mann June 2003] correct in 2 <sup>nd</sup> print
374, S 2pb; 4	(S2) and the control system	(S2) and the control unit	Correct as is (NB Figure 17.4 should be shifted down two lines to sit above the figure title)
374, E 2pb; 4b	– as shown by the dotted red line.	– as shown by the dotted line.	[Mann June 2003] correct in 2 <sup>nd</sup> print
375, E 2p; 2	that would enable designer's to discriminate	that would enable designers to discriminate	Okay

		[Delete an apostrophe.]	
375, Q 3pb; 1	The classic example of ... [No blank line above this sentence.]	[Insert a blank line above for explicitly making a new paragraph.]	Not a new paragraph. Correct as is
375, QS 3pb; 6-7	but adjustment of either (tap) has an influence on the other.	but adjustment of one function with either tap has an influence on the other function.	okay
375, ES 2pb; 1	as the principle mechanism for determining	as the principal mechanism for determining	okay
376, QS 2pb; 1	Note also how to truly reflect what happens in the mixer tap, the FAA model	Note also how to truly reflect what happens in the mixer tap; the FAA model [Replace a comma with a semi-colon.]	Correct as is
377, E 2p; h	Paper Stapler [No blank line above.]	Case Study 1 – Paper Stapler [Also insert a blank line above.]	[Mann June 2003] correct in 2 <sup>nd</sup> print, but text should not be indented
377, E Fig; capt.	Figure 17.8: ... (Blue boxes represent	Figure 17.8: ... (Darker boxes represent	[Mann June 2003] correct in 2 <sup>nd</sup> print
378, E 2p; 5-4b	the question 'are there any other ways of delivering the function 'join paper?' The other	the question 'are there any other ways of delivering the function 'join paper?' The other [Need another closing quotation mark.]	okay
378, E 2p; 4-3b	and specify 'in what direction will a staple evolve in, and a t what point does it being a staple?	and specify 'in what direction will a staple evolve in, and at what point does it being a staple?' [Delete a space.] [Insert a closing quotation mark.]	okay
379, CS 3pb; 2	Looking at the questions in Figure 17.1,	Looking at the questions in Table 17.1,	okay
379, QS 1pb;1	The next thing to do is examine the attributes of the top-cover,	The next thing to do is to examine the attributes of the top-plate, [Insert 'to'.] [Replace top-cover with top-plate.]	okay
380, QS 1p; 3-4	questions – like do the magazine and top-plate have to move relative to other, or be difficult to facilitate assembly – would	questions – like 'do the magazine and top-plate have to move relative to other, or be difficult to facilitate assembly?' – would [Insert quotation marks and a question mark.]	okay
380, ES 1p; 2-1b	is 'what's stopping us from trimming this component.)	is 'what's stopping us from trimming this component?) [Replace a period with a question mark.]	[Mann June 2003] correct in 2 <sup>nd</sup> print
		[Close the quotation mark.]	correct in 2 <sup>nd</sup> print
380, E	and function analysis in	and function analysis.	[Mann June 2003]

2p; 1b	action.		correct in 2 <sup>nd</sup> print
380, E 3p; 7b	– 'cover attribute 'apearance'	– 'cover attribute 'appearance'	okay
380, QS 3p; 2-1b	none of them (as yet) possesses the aesthetic capabilities of the cover.	none of them (as yet) possesses the aesthetic capabilities like the cover.	Correct as is
380, E 2pb; 1	The point of this final thought being that it is absolutely essential	The point of this final thought is that it is absolutely essential	Correct as is
381, QS 2pb; 4	Each stage also contains	Each step also contains	okay
382, E 2p; 4	As described in Chapter 5,	As described in Chapter 6,	5 is correct – no change required
382, E 4p; 1	Here we immediately see [A new line starts here.]	[Delete the line change, and combine with the paragraph above.]	[Mann June 2003] correct in 2 <sup>nd</sup> print
382, CS 1pb; 1b	the questions detailed in Figure 17.1.	the questions detailed in Table 17.1.	Okay

## Chapter 18

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
385, E 4p; 1b	The questionnaire is repeated here in Figure 18.1.	The questionnaire is repeated here.	[Mann June 2003] correct in 2 <sup>nd</sup> print
385, E Fig; h	Figure 18.1: Ideal Final Result Problem Definition Questionnaire	[Delete this caption and treat the content of the figure as simple text.]	[Mann June 2003] correct in 2 <sup>nd</sup> print
385, QS 1pb; 2b	The second solution trigger [This sentence is started as a new line with a line change.]	[Delete the line change and join this sentence to the preceding paragraph.] [Or else insert a blank line to start a new paragraph.]	Delete line change – text should follow on immediately from preceding sentence
385, QS 1pb; 2-1b	is one with a much more explicit set of problem solving directions to offer:	is one with a much more explicit set of problem solving directions to offer as is detailed in the following section.	okay
386, E 3p; 3-4	That analysis has taken as its start point, the range of	That analysis has taken as its start point the range of [Delete a comma.]	correct in 2 <sup>nd</sup> print
389, CS Fig	[The figure 18.4 is too small to read.]	[Only the essential parts of the patent are to be shown with modified arrangement. Heading, abstract, and the figure should be shown.]	We will see what we can do to improve the figure
389, E 2pb, h	Self-X Patents' title	'Self-X Patents' [Insert an open quotation mark.]	okay
389, E 2pb; 1b	The searches covered the period from 1985 to the present day.	The searches covered the period from 1985 to 2002.	[Mann June 2003] correct in 2 <sup>nd</sup> print
394, ES	The main point, and the	The main point, and the	Correct as is

3p; 1-2	principal connection between this kind of IFR definition and a solving tool is that	principal connection between this kind of IFR definition and a solving tool, is that [Insert a comma.]	
395, E 3pb; 1	1) Use the questionnaire in Figure 18.1 as a means	1) Use the questionnaire in the beginning of this chapter as a means	okay
395, E 2pb; 2-1b	(akin to the 'self-service' Inventive Principle in Chapter 10.	(akin to the 'self-service' Inventive Principle in Chapter 10). [Insert a closing parenthesis.]	[Mann June 2003] correct in 2 <sup>nd</sup> print

## Chapter 19

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
397, CS title	Problem Solving: Psychological Inertia Tools [This title is not consistent with those in other chapters.]	Problem Solving Tools Psychological Inertia Breaking [or Breaking Psychological Inertia]	Psychological Inertia Breaking
397, CS 1p; h	Introduction [Other chapters do not have this kind of heading.]	[Delete this heading.]	okay
398, E 1p; 1b	Admit it, its one you applied.	Admit it, it's one you applied. [Insert an apostrophe.]	okay
398, QS 2p; 1	But the rule was never there. Just as similar 'rules' are never there	But the rule was never there, just as similar 'rules' are never there [Combine into a sentence.]	Text is correct as is
399, E 1p; 2-3	Very simply, what the 9-Windows asks us to do is think about	Very simply, what the 9-Windows asks us to do is to think about	okay
399, CS 1p; 1b	each 'is the real problem here?'	each 'is the real problem here?' – Figure 19.3.	okay
399, ES 3p; 1b	has directed you to this Chapter that a little reminder	has directed you to this Chapter, that a little reminder [Insert a comma.]	okay
399, ES 1pb; 1b	a special case of encouraging the problem to zoom	a special case of encouraging the problem solver to zoom	Corrected to 'problem-owner' in the 2 <sup>nd</sup> print
401, E 2p; 1	We could chose to examine	We could choose to examine	okay
401, QS 2p; 1	as a contradiction (think we're trying to improve is pressure; thing stopping us	as a contradiction (thing we're trying to improve is pressure; thing stopping us	okay
401, E Fig.	[In Fig. 19.6] (flow just about To separate from wall)	(flow just about to separate from wall)	okay
401, ES 1pb; 1	approaching the separation problem,	approaching the separation point,	okay
402, E	– he (or she!) justs wants to	– he (or she!) just wants to	okay



2pb; 3-2b			
403, QS 1p; 5-6	stay there and then <b>hope</b> <b>they</b> help keep a hold of the problem person	stay there and then help keep a hold of the problem person	okay
403, QS 2pb; 2-1b	in the overall context of the systematic creativity <b>whole</b> we are describing	in the overall context of the systematic creativity <b>which</b> we are describing	Correct as is
404, CS Fig.	[In Fig. 19.10: The label 'Time = 0' is drawn close to the center (or 'current position').]	[The label 'Time = 0' is drawn at the left end of the figure and a left-ward arrow is added to it.]	Figure is correct as is
405, ES 2p; 1	By way of <b>example</b> of some of the things the tool may prompt us	By way of <b>example</b> , some of the things the tool may prompt us [Delete	okay
406, S 2pb; 2-1b	and so we will define that as our original <b>problem</b> .	and so we will define that as our original <b>problem – Figure 19.12</b> .	okay

## Chapter 20

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
411, CS title	Problem Solving Tools <b>Subversion Analysis</b> [Subversion Analysis is a relatively small topic in this chapter.]	Problem Solving Tools <b>Design for Reliability</b> [This new title is the target of various tools discussed in this chapter both in and out of TRIZ.]	Keep subversion analysis title as this is where the main emphasis of the chapter lies
411, QS 1p; 1	The <b>instinct</b> of most people discovering TRIZ is that there is	The <b>intuition</b> of most people discovering TRIZ is that there is	Correct as is
411, QS 1p; 2b	Certainly the <b>instinct</b> of this author when faced	Certainly the <b>intuition</b> of this author when faced	Correct as is
411, QS 1p; 1b	for a method other than TRIZ as a first <b>instinct</b> .	for a method other than TRIZ as a first <b>choice</b> .	okay
411, QS 2p; 1	This <b>instinct</b> is in fact only partially correct,	This <b>intuition</b> is in fact only partially correct,	Correct as is
411, E 3p; h	Reliability	1) Reliability	okay
412, E 1p; 2	something that is comparatively to design	something that is comparatively <b>difficult</b> to design	[Mann June 2003] correct in 2 <sup>nd</sup> print
412, E 1p; 3	effective 'design reliability' almost demands consideration	effective 'design reliability' almost <b>inevitably</b> demands consideration	[Mann June 2003] 2 <sup>nd</sup> print has 'inevitable' – this should be changed to 'inevitably'
412, E 2pb; 1-2	'someone, somewhere has already solved something like my <b>problem</b> , it appears	'someone, somewhere has already solved something like my <b>problem</b> ', it appears [Insert a quotation mark.]	okay
413, E 1pb; 1b	between the <b>to</b> curves	between the <b>two</b> curves	correct in 2 <sup>nd</sup> print

414, E 2p; 3	The <b>paradox</b> in both cases, is that	The <b>paradox</b> , in both cases, is that [Insert a comma.]	okay
414, QS 3p; 5	Then we multiply <b>in</b> a 'fudge factor'	Then we multiply <b>it by</b> a 'fudge factor'	okay
414, E 3p; 7	tends to happen next <b>tie</b> around is	tends to happen next <b>time</b> around is	[Mann June 2003] correct in 2 <sup>nd</sup> print
415, QS 1p; 6	This despite the emergence of	This <b>is true</b> despite the emergence of	Okay
415, QS 1p; 2-1b	Too often these tools are used as <b>after the event</b> analysis tools rather than before the event, influence the design synthesis tools.	Too often these tools are used as ' <b>after the event</b> ' analysis tools rather than ' <b>before the event, influence the design</b> ' synthesis tools. [Insert four quotation marks.]	okay
415, E 2p; 2-1b	this author <b>always thinks about a telling example from days spent working in the aerospace industry.</b>	this author <b>has observed many examples from across all sectors of engineering.</b>	[Mann June 2003] delete this paragraph completely as it adds no value
415, QS 3p; 4	on the belief that <b>if</b> the strongest reliability improvement solutions are	on the belief that the strongest reliability improvement solutions are [Delete 'if'.]	okay
415, E 1pb; 3-4	<b>Table 1</b> extracts the most likely of the Inventive Principles	<b>Table 20.1</b> extracts the most likely of the Inventive Principles	okay
415, CS Table, h	Table 20.1 TRIZ Inventive Principles [Title is written below the table.]	[Title of a table should be written above the table.]	Convention is to keep it below in our book
416, E 3p; 3	Probability of failure, <b>Z(t)</b> , is given by:	Probability of failure, <b>F(t)</b> , is given by:	okay
416, E 4p; 2	[In the equation of <b>Z(t)</b> , an operator is show by a <b>bi-directional arrow symbol.</b> ]	[The operator should be a multiplication.]	correct in 2 <sup>nd</sup> print
417, E 1p; 2b	a very limited start <b>ppoint</b>	a very limited start <b>point</b>	okay
418, QS 1pb; 2b	of each system failure mode (top <b>level</b> event) is	of each system failure mode (top event) is [This term is introduced first as 'top event' but appears as 'top level event' at several places around here. Better to make them consistent.]	okay
419, E 1p; 4	[In the second equation of <b>F<sub>s</sub></b> , the operator is printed as a <b>cup operator.</b> ]	[The operator should be a 'nearly equal' operator.]	correct in 2 <sup>nd</sup> print
419, E 1p; 6	[In the equation of <b>F<sub>s</sub></b> , four operator are printed by <b>bi-directional arrow symbols.</b> ]	[The operators should be multiplication operators.]	correct in 2 <sup>nd</sup> print
419, S Fig	[In Figure 20.8, <b>AND</b> and <b>OR</b> gates are used without	[Labels are attached to the <b>AND</b> and <b>OR</b> gates.]	We will leave as is in the next print.

	explanation.]		
420, CS 1p; 3	"What happens if this component fails?"	'What happens if this component fails?'	correct in 2 <sup>nd</sup> print
422, ES 2p; 3-4	artificial intelligence. The results of a FMECA [A line change is inserted between these sentences.]	artificial intelligence. The results of a FMECA [Delete a line change.]	okay
422, ES 4pb; 4-3b	such as high and low. Insertion of particular components [A line change is inserted between these sentences.]	such as high and low. Insertion of particular components [Delete a line change.]	Okay
422, S 3pb; 2-1b	to other design for reliability tools.	to other 'design for reliability' tools.	okay
422, S 1pb; 1-2	making the design for reliability task more interesting.	making the 'design for reliability' task more interesting.	okay
422, E 1pb; 3	people feel when asked to don the black hat	people feel when asked to do the black hat	[Mann June 2003] correct in 2 <sup>nd</sup> print – 'don' is the same as 'put on'
423, QS 1p; 2	other principle thing that TRIZ adds	other principal thing that TRIZ adds	okay
423, ES 1p; 2	TRIZ adds to the design fro reliability story	TRIZ adds to the 'design for reliability' story [Replace 'fro' with 'for'.] [Insert quotation marks.]	[Mann June 2003] okay okay
423, CS 2p	If a failure mode exists, [This sentence is italicized and enclosed in a box.]	[Maybe better to indent and italicize, but without a box.]	Correct as is
423, CS Fig	[In Fig. 20.10, some lines in the drawing are too thin to see well.]	[Some of the lines should be drawn thicker.]	We will see what we can do
424, QS 1p; 5-6	for example 'mechanical field (e.g. vibration) on body acts on tube to produce a channel.	for example 'mechanical field (e.g. vibration) of body acts on tube to produce a channel'. [Replace 'on' with 'of'.] [Insert a quotation mark.]	okay
424, QS 1pb; 3	probably not help solve the problem so why bother, it would not be entirely unjustified.	probably not help solve the problem, 'so why bother? it would not be entirely unjustified'. [Not easy for me to understand this colloquial expression.]	Text is correct as is. (The meaning is about if we do all this hard work and still don't necessarily produce an answer, what was the point?)
425, QS 2p; 3	in designing products to very high (i.e. failure rates of 10 <sup>-12</sup> or better).	in designing products to very high reliability (i.e. failure rates of 10 <sup>-12</sup> or better).	okay
425, QS 3p; 3-2b	a given design will only deliver a certain maximum (usually unknowable a priori) failure rate capability.	a given design will only deliver a certain maximum (usually unknowable a priori) reliability capability.	Correct as is
426, QS	means of avoiding repeat	means of avoiding repeated	okay

3p; 1b	mistakes are necessary:	mistakes are necessary:	
427, E 3p; 1	the design capability evolution trend illustrated in Figure 20.13,	the design capability evolution trend illustrated in Figure 20.11,	okay

## Chapter 21

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
429, QS 3pb; h	'Best' Selection?	'Best' Selection Simple MCDA [Delete a question mark.] [Insert a lower level heading to introduce the important term. I feel that this kind of lower level headings are better inserted in various sections of the whole book. I will check this point later.]	Correct as is
430, CS 3pb; 2-3	In the case of 'qualitative' criteria, it is necessary to allocate some form of numerical scoring system.	In both cases of 'quantitative' and 'qualitative' criteria, it is necessary to allocate some form of numerical scoring system. [More careful handling of the 'quantitative' criteria is also necessary, I think.]	Okay
431, QS 3p; 2-3	note how the price, running cost and acceleration scores have been inverted	note how the price, running cost and acceleration (i.e. time needed to get a certain speed from the standing position) scores have been inverted	okay
431, CS 1pb; h	[No heading at the start of this paragraph.]	Ratio-scaling MCDA [Since this is an important term to be introduced here, we should better have a subtitle to lead this subsection.]	Correct as is
432, E 4p; 1	1) The user selects on of the solution candidates	1) The user selects one of the solution candidates	okay
432, E 5p; 1b	twice as good, a '0.5' that it is half is good, and so on.	twice as good, a '0.5' that it is half as good, and so on.	[Mann June 2003] okay
432, QS 2pb; 3	an accurate description of the true differences between different values.	an accurate description of the true significant differences between different values.	Correct as is
433, QS 1p; 1	Figure 21.3 below provides an example ratio-scaling calculation for the analysis previously conducted for Figure 21.1.	Figure 21.3 below provides an example of ratio-scaling analysis and calculation for the problem previously conducted for Figure 21.1.	okay
433, QS 3p; 2	were subjected to the ratio-scaling calculation	were subjected to the ratio-scaling data-acquisition and calculation	Correct as is

433, CS 3pb; 1	The raw scores were then processed by first taking logarithms.	[Even though natural logarithms are taken in the table, ordinary logarithms may be better to use.]	We will stay with the current form for now – no changes required
434, E 1p; 3b	the elements analysed during this activity <b>ill</b> be the ones	the elements analysed during this activity <b>will</b> be the ones	[Mann June 2003] correct in 2 <sup>nd</sup> print
435, E 2pb; 3b	a <b>god</b> solution.	a <b>good</b> solution.	[Mann June 2003] correct in 2 <sup>nd</sup> print
436, S 1p; 3-4	If the solution meets all of the requirements stated <b>here</b> then we	If the solution meets all of the requirements stated <b>here</b> , then we [Insert a comma.]	okay
437, QS 3p; 1	In terms of <b>is</b> your solution ' <b>good enough</b> ', you are	In terms of ' <b>is</b> your solution <b>good enough</b> ?' you are [The quotation marks are shifted to cover the whole question.]	okay
437, E Ref.	1) CreaTRIZ <b>v2.2</b> ,	1) CreaTRIZ <b>v3</b> ,	[Mann June 2003] correct in 2 <sup>nd</sup> print

## Chapter 22

Page Type Parag. Line	Is	Has to be (Question/Comment)	Answer
439, ES 2p; 6	is thus explained by the <b>point</b> marked on the figure	is thus explained by the <b>small oval</b> marked on the figure	okay
439, ES 2p; 7	The <b>point</b> suggests that	The <b>oval</b> suggests that	okay
439, E 2p; 5b	This <b>paper</b> discusses the emergence	This <b>chapter</b> discusses the emergence	okay
440, E 1p; 3-4	The second, longer, part of the <b>paper</b> examines	The second, longer, part of the <b>chapter</b> examines	okay
440, E 1p; 2b	the <b>paper</b> focuses	the <b>chapter</b> focuses	Okay
441, S Fig.	[In the middle of the figure TRIZ is shown but its range is not clearly seen.]	[The box of TRIZ is show in light gray for clarity.]	Correct as is
442, E 1p; 2	The <b>paper</b> briefly reviews	The <b>chapter</b> briefly reviews	okay
443, S Fig	[Questions are itemized without labels.]	[The questions are labeled as a, b, ... in the same manner as in Chapter 17.]	We will leave them as is – no changes required
443, Q 2pb; 3-1b	although the AD scheme for correlating the functional requirements of a system to the selected design parameters to the subsequent method of manufacture may offer some additional benefits to TRIZ.	[It is not easy to parse this clause correctly.]	Start a new sentence after '...part of TRIZ.' The AD scheme for mapping functional requirements to design parameters and then design parameters to process variables offers some additional benefits to TRIZ.

443, E 1pb; 2b	hypothesised in this <a href="#">paper</a> ),	hypothesised in this <a href="#">chapter</a> ),	okay
444, QS 1p; 2-3	'apples versus oranges' comparisons between different <a href="#">systems</a> .	'apples versus oranges' comparisons between different <a href="#">solutions</a> .	okay
444, ES 3p; 1	<a href="#">TRIZ</a> on the other hand, has much to offer Six Sigma.	<a href="#">TRIZ</a> , on the other hand, has much to offer <a href="#">to</a> Six Sigma. [Insert a comma.] [Insert 'to'.]	okay
444, QS 3p; 3b	a contradiction (the <a href="#">principle</a> reason why systems hit fundamental limits)	a contradiction (the <a href="#">principal</a> reason why systems hit fundamental limits)	okay
445, QS 2p; 2-1b	and the concept of psychological inertia and tools to overcome all exist in some form in both pieces of work.	and the concept of psychological inertia and tools to overcome – all exist in some form in both pieces of work. [Insert a dash.]	Dash would be better as 'it' i.e. 'tools to overcome it all exist...'
446, QS 2p; 3b	identification of how the meta-programmes <a href="#">underlying</a> the way the human brain work	identification of how the meta-programmes <a href="#">underlie</a> the way the human brain work	...underlie the way the human brain works, and how they in turn...
447, QS 1p; 1	to the evolution of such a 'systematic creativity' model <a href="#">is</a> that it will emerge	to the evolution of such a 'systematic creativity' model that it will emerge [Delete 'is'.]	We believe that one of the fundamental factors enabling the evolution of such a 'systematic creativty' model is that it will emerge....
448, E Ref.	14) <a href="#">Domb, E., 'Using TRIZ ....</a> 15) <a href="#">Lodge, M. 'Magnitude Scaling ...</a>	14) <a href="#">Lodge, M. 'Magnitude Scaling ...</a> 15) <a href="#">Domb, E., 'Using TRIZ ....</a> [Interchange Ref. 14 and Ref. 15.]	okay
448, E Ref.	20) <a href="#">CreaTRIZ v2.2, www.creax.com</a>	20) <a href="#">CreaTRIZ v2.2 or higher, www.creax.com</a>	[Mann June 2003] correct in 2 <sup>nd</sup> print

PS. Appendices will be checked later.