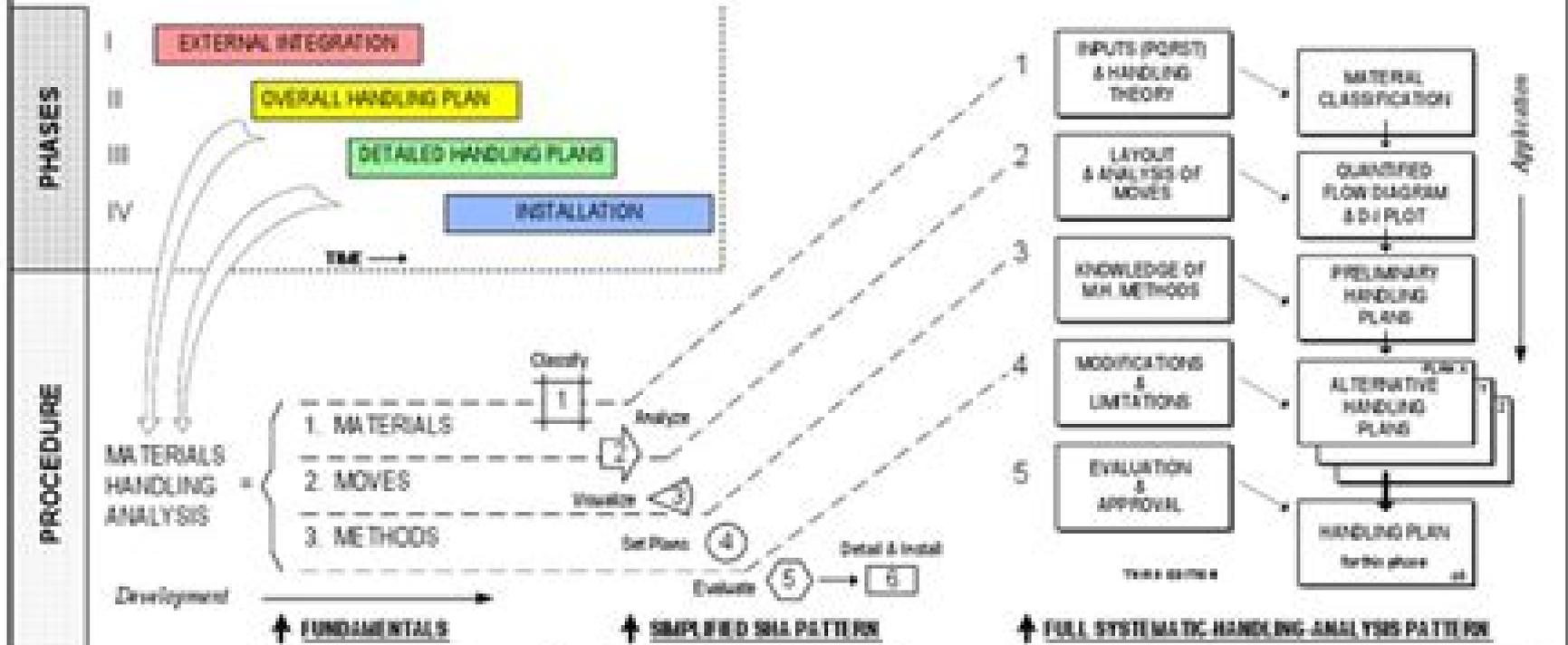


# SYSTEMATIC HANDLING ANALYSIS (SHA) – Capsule Summary



CONVENTIONS	Process Chart Symbols & Action*	Symbols Extended to Identify Equipment & Space	Color Used	Mark & Write**	Formulas and Explanations	Visual Letter	No. Value	No. of Lines	Intensity Rating of Material Moves	Color Code	Evaluating Description	Letter/Value
	<p>1. Operation</p> <p>2. Transportation</p> <p>3. Handling</p> <p>4. Storage</p> <p>5. Delay</p> <p>6. Inspection</p> <p>* A.S.T. Standard Symbols (ASIS) Standard (Adapted or based on ASIS procedure)</p>	<p>○ Palleting or Loading Equipment &amp; Space</p> <p>○ Assembly, Sub-Assembly, Dis-Assembly</p> <p>○ Transport-related Equipment &amp; Space</p> <p>○ Handling Area - Pick-up &amp; Set-Down</p> <p>○ Storage Equipment and Space</p> <p>○ Station or Hold Area</p> <p>○ Input, Tool, Check Tagged and Space</p> <p>○ Lining &amp; Support Equipment &amp; Space</p> <p>○ Office or Planning Area, or Building Features</p>	<p>Green</p> <p>Red</p> <p>Yellow</p> <p>Yellow</p> <p>Yellow</p> <p>Blue</p> <p>Blue</p> <p>Orange</p>	<p>Black &amp; White</p> <p>Black</p> <p>Black</p> <p>Black</p> <p>Black</p> <p>Black</p> <p>Black</p> <p>Black</p>	<p>Identify (I) = nP4 Designated by width of line</p> <p>Outline (O) Designated by length of line</p> <p>Transport (TW) TW = 1 x O = nP4 &amp; D Designated by area of line</p> <p>Length</p> <p>ASIS Symbols: D-Direct, C-Central, X-Channel (Cross)</p>	<p>A 4</p> <p>B 3</p> <p>I 2</p> <p>O 1</p> <p>U 0</p>	<p>4</p> <p>3</p> <p>2</p> <p>1</p> <p>0</p>	<p>Generally High Intensity of Moves</p> <p>Especially High Intensity of Moves</p> <p>Important Intensity</p> <p>Ordinary Intensity</p> <p>Unimportant Moves of Negligible Intensity</p>	<p>Red</p> <p>Orange/Yellow</p> <p>Green</p> <p>Blue</p> <p>Unmarked</p>	<p>Excellent Results (Excellent)</p> <p>Especially Good Results (Very Good)</p> <p>Important Results (Good)</p> <p>Ordinary Results (Fair)</p> <p>Unimportant Results (Poor)</p> <p>Not Applicable Results (Not Substantive)</p>	<p>A/4</p> <p>B/3</p> <p>I/2</p> <p>O/1</p> <p>U/0</p> <p>X/1</p>	

\* Dash (dotted) line indicates half a line, or half way between two ratings - recorded by minus sign behind visual letter

\*\* (black) (white) Standard (Adapted or based on S.H.A. procedure)

© 1988, 1990, 1995, 2000, 2005, 2010, 2015, 2020, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060, 2065, 2070, 2075, 2080, 2085, 2090, 2095, 2100, 2105, 2110, 2115, 2120, 2125, 2130, 2135, 2140, 2145, 2150, 2155, 2160, 2165, 2170, 2175, 2180, 2185, 2190, 2195, 2200, 2205, 2210, 2215, 2220, 2225, 2230, 2235, 2240, 2245, 2250, 2255, 2260, 2265, 2270, 2275, 2280, 2285, 2290, 2295, 2300, 2305, 2310, 2315, 2320, 2325, 2330, 2335, 2340, 2345, 2350, 2355, 2360, 2365, 2370, 2375, 2380, 2385, 2390, 2395, 2400, 2405, 2410, 2415, 2420, 2425, 2430, 2435, 2440, 2445, 2450, 2455, 2460, 2465, 2470, 2475, 2480, 2485, 2490, 2495, 2500, 2505, 2510, 2515, 2520, 2525, 2530, 2535, 2540, 2545, 2550, 2555, 2560, 2565, 2570, 2575, 2580, 2585, 2590, 2595, 2600, 2605, 2610, 2615, 2620, 2625, 2630, 2635, 2640, 2645, 2650, 2655, 2660, 2665, 2670, 2675, 2680, 2685, 2690, 2695, 2700, 2705, 2710, 2715, 2720, 2725, 2730, 2735, 2740, 2745, 2750, 2755, 2760, 2765, 2770, 2775, 2780, 2785, 2790, 2795, 2800, 2805, 2810, 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# Systematic Handling Analysis

**Hessel Visser**



## **Systematic Handling Analysis:**

**Systematic Handling Analysis** Richard Muther,1969     Systematic Handling Analysis Richard Muther,Knut Haganas,1975     **Systematic Handling Analysis** Richard Muther,Knut Haganäs,1969     **Systematic Handling Analysis, by Richard Muther and Knut Haganäs** Richard Muther,1969     *Simplified Systematic Handling Analysis* Richard Muther,Chamnong Jungthirapanich,Ronald J. Haney,1994-06     **Systematische Materialfluss- und Transportanalyse SHA Systematic handling analysis SHA, dt** Richard Muther,Marcel E. Bloch,Knut Haganäs,1971

**Engineering for Business** Colin O. Benjamin,2009-05-16 Engineering for Business features teaching materials and case studies developed for senior undergraduate courses in engineering and business and graduate level classes in Engineering Management Industrial Engineering and Management and Technology Management This work surveys the more robust quantitative tools and techniques used to facilitate decision making in business and uses case studies to illustrate their application Where appropriate the readers are provided with frameworks to enable application of the techniques covered and are directed to commercially available software developed to facilitate the deployment of these tools and techniques Traditional industrial engineering and engineering management techniques related to Engineering Economy Multi Criteria Decision making Project Management Management Science and Facilities Planning are covered These are complemented by a review of more topical areas such as Applications Software for Business Technology Commercialization and Supply Chain Management In all areas the emphasis is on integrating theory and practice through the use of case studies based on projects conducted in a wide range of industry settings Engineering for Business provides a robust framework for the explicit integration of engineering tools and techniques into a business curriculum The case studies are rich in data and provide great opportunities for students to apply the techniques covered and to propose innovative solutions to open ended project assignments     Tool and Manufacturing Engineers Handbook: Material and Part Handling in Manufacturing Philip Mitchel,1983 Get the expert advise you need to shrink handling costs reduce downtime and improve efficiency in plant operations You ll use this comprehensive handbook during post design process selection and planning for establishing quality controls tests and measurements to streamline production and for managerial decision making on capital investments and new automated systems     **The Wiley Encyclopedia of Packaging Technology** Kit L. Yam,2010-01-05 The complete and authoritative guide to modern packaging technologies updated and expanded From A to Z The Wiley Encyclopedia of Packaging Technology Third Edition covers all aspects of packaging technologies essential to the food and pharmaceutical industries among others This edition has been thoroughly updated and expanded to include important innovations and changes in materials processes and technologies that have occurred over the past decade It is an invaluable resource for packaging technologists scientists and engineers students and educators packaging material suppliers packaging converters packaging machinery manufacturers processors retailers and regulatory agencies In addition to updating and improving

articles from the previous edition new articles are also added to cover the recent advances and developments in packaging Content new to this edition includes Advanced packaging materials such as antimicrobial materials biobased materials nanocomposite materials ceramic coated films and perforated films Advanced packaging technologies such as active and intelligent packaging radio frequency identification RFID controlled release packaging smart blending nanotechnology biosensor technology and package integrity inspection Various aspects important to packaging such as sustainable packaging migration lipid oxidation light protection and intellectual property Contributions from experts in all important aspects of packaging Extensive cross referencing and easy to access information on all subjects Large double column format for easy reference

Industrial Engineering and Production Management Martand T Telsang, For close to 20 years Industrial Engineering and Production Management has been a successful text for students of Mechanical Production and Industrial Engineering while also being equally helpful for students of other courses including Management Divided in 5 parts and 52 chapters the text combines theory with examples to provide in depth coverage of the subject

**Analysing, Planning and Selection of Materials Handling Systems in a Country on the Way Towards Industrialization** Paraschos Maniatis, 1983

**Job Shop Lean** Shahrukh A. Irani, 2020-05-04 In the 1950 s the design and implementation of the Toyota Production System TPS within Toyota had begun In the 1960 s Group Technology GT and Cellular Manufacturing CM were used by Serck Audco Valves a high mix low volume HMLV manufacturer in the United Kingdom to guide enterprise wide transformation In 1996 the publication of the book Lean Thinking introduced the entire world to Lean Job Shop Lean integrates Lean with GT and CM by using the five Principles of Lean to guide its implementation 1 identify value 2 map the value stream 3 create flow 4 establish pull and 5 seek perfection Unfortunately the tools typically used to implement the Principles of Lean are incapable of solving the three Industrial Engineering problems that HMLV manufacturers face when implementing Lean 1 finding the product families in a product mix with hundreds of different products 2 designing a flexible factory layout that fits hundreds of different product routings and 3 scheduling a multi product multi machine production system subject to finite capacity constraints Based on the Author s 20 years of learning teaching researching and implementing Job Shop Lean since 1999 this book Describes the concepts tools software implementation methodology and barriers to successful implementation of Lean in HMLV production systems Utilizes Production Flow Analysis instead of Value Stream Mapping to eliminate waste in different levels of any HMLV manufacturing enterprise Solves the three Industrial Engineering problems that were mentioned earlier using software like PFAST Production Flow Analysis and Simplification Toolkit Sgetti and Schedlyzer Explains how the one at a time implementation of manufacturing cells constitutes a long term strategy for Continuous Improvement Explains how product families and manufacturing cells are the basis for implementing flexible automation machine monitoring virtual cells Manufacturing Execution Systems and other elements of Industry 4 0 Teaches a new method Value Network Mapping to visualize large multi product multi machine

production systems whose Value Streams share many processes Includes real success stories of Job Shop Lean implementation in a variety of production systems such as a forge shop a machine shop a fabrication facility and a shipping department Encourages any HMLV manufacturer planning to implement Job Shop Lean to leverage the co curricular and extracurricular programs of an Industrial Engineering department *Analysis and Design Alternatives for the Rice Processing Industry in Central Mexico* Mariana Ruiz Morales,1995 *Logistics* Hessel Visser,2019-11-08 Logistics Principles Practice is a general introduction to the subject This specialized field is fast moving fulfilling orders on time is of crucial importance in the modern age of internet economy and just in time production Besides dealing with the logistics of purchasing production and distribution the book also examines common ground with marketing quality and production design This integrated approach ensures that important topics such as e business CRM process design E procurement enterprise resource planning and E logistics are given prominent coverage This textbook can be used as core reading for all students of logistics and operations management Modern Materials Handling ,1967 Planting Seeds and Fertilizer ,1964 Basics of Material Handling Raymond A. Kulwiec,Material Handling Institute,1981 **The Professional Materials Handling Learning System** ,1993 *Cassier's Industrial Management and Mechanical Handling* ,1967 *Industrial Engineering* ,1981

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