PHOENIX USA RV - RV PARTS DIGITAL LIBRARY DESIGN

PURDUE UNIVERSITY | School of Industrial Engineering

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CLIENT BACKGROUND

Phoenix USA RV

- Headquartered in Elkhart, IN
- Established in 1996
- RV manufacturer with a specialty in custom motorhome manufacturing
- Produces and sells 12 unique models of RVs to 10+ dealerships around the country

PHOENIX USA RV

PROBLEM STATEMENT

Phoenix USA RV is in the process of transforming its part data into 3D models, and is seeking our assistance to develop a standardized system for organizing and accessing its CAD files. The objective is to create a ***user-friendly and well-organized database*** that can be utilized by both engineers and operators to improve the development and revision of parts.

The solution must maintain the existing part number system while implementing an improved print numbering system to effectively manage the hierarchy of parts. **The ultimate goal is to enhance Phoenix USA RV's manufacturing capabilities and streamline the development and revision process.**

SYSTEM MODEL

File System

The initial print organization system consisted of file folders that categorized all parts and drawings based on their RV model number.

This causes difficulties with duplicate parts that are used in multiple models and updating copies of prints.

Name	Modified	Modified By
2100 model	March 2	Vince Gatto
2350 model	March 2	Vince Gatto
2351 model	March 2	Vince Gatto
2351D model	March 2	Vince Gatto
2400 model	March 2	Vince Gatto
2551 model	March 2	Vince Gatto
2552 model	March 2	Vince Gatto
2810 model	March 2	Vince Gatto
2910 D,E &T model	March 2	Vince Gatto
2950 model	March 2	Vince Gatto
3100 model	March 2	Vince Gatto
Drawings	March 2	Vince Gatto

Print Numbering System

[Model]-[Sequential Print #]-[Part/Assembly Name].[File Type]

01-0012-E Sink base 2100.dwg

01-0014-D Wardrobe Cab for Furnace 2100.dwg

METHODOLOGY

IDEATION → **COMMUNICATION** → **REVISION**

IDEATION	COMMUNICATION	REVISION
Developing new ideas and revisions to the current version of the solution	Presenting status of the solution to stakeholders	Reviewing feedback and planning next stages

Research indicates that categorization by subject or topic is the most useful approach to information organization[1], which was prioritized in solution development.

[1]O'Reilly - Information Architecture for the World Wide Web

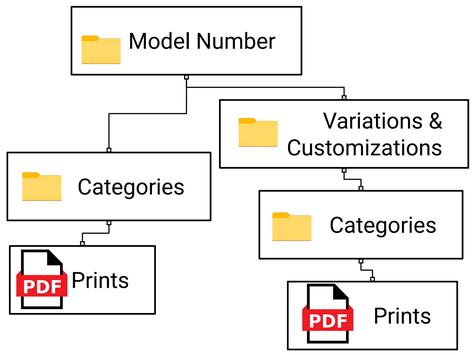
RESULTS

File Naming Convention

[category]-[TRX/Cruiser]-[sequential print number]-[revision letter]

Example: PEP-TRX-1013-B

File Categorization System



- RV Parts Master List
- Tools/File Storage System

Category Abbreviations	
PCS	Chassis
PCS	Cabinets
PEP	Electrical
PFL	Flooring
PFM	Fabricated Parts
PFP	Floorplans
PFW	Plumbing
PLM	Light Mfd. Parts
PSL	Safety Layout

DISCUSSION

Scope

- Original scope: Identifying and structuring an organizational system for all parts and prints that helps to ensure proper assembly of motor homes, developing a naming convention for all parts and prints, and using Solidworks to make 3D models of each part and print and store in accordance with the organization system.
- New scope: A naming convention for part and assembly prints and a file storage system recommendation for extra depth.

Challenges

- Difficult to completely eliminate duplicate files among a model-prioritized system organization system.
- Must balance simplicity of a file naming convention with quantity of information presented.

Future Implications

- Phoenix USA RV is currently producing 1.5 RV's per week, with a goal of reaching 5 RV's per week by August.
- Assembly line output constrained by manufacturing errors which are caused by disorganized engineering methods.
- Improved organization of files can lead to higher quality engineering methods and increased RV output.