



International Unicycling Federation

Structuring Unicycling Skills

1 General

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1.2 Document History

| Version | Author | Changes |
|---------|-----------------|---|
| 0.1 | Thomas Gossmann | Document Created |
| 0.2 | Thomas Gossmann | Added Goal and Plan, clarify transition parts |
| 0.3 | Thomas Gossmann | Reworked Part 1, 2, 3 and 6, Added Final Conclusion |
| 0.4 | Thomas Gossmann | Fixed some typos and grammer, some minor fixes. |

1.3 About the Author

I'm Thomas Gossmann. I've been riding Freestyle since 2000. I am also a freestyle trainer and trained group freestyle for the past four years. I also maintain some major unicycle webpages:

www.einradfahren.de, www.unicycle.tv and www.iufinc.org.

Structuring skills has been a personal project I've been thinking about over the past years, as it helped me with my training. Unfortunately when working resp. thinking about skill structure, this topic could peeve you and your kids. I got an idea about a better way, where one should rethink this topic and I want to bring this into full bloom now.

You may contact me via email gossi@einradfahren.de, twitter [@unistylor](https://twitter.com/unistylor) or on facebook <http://www.facebook.com/tgossmann>.

2 Introduction

This document aims to provide a global structure to unicycle skills. Global under this circumstances means across all disciplines.

2.1 Terminology

When we are talking about structuring, there are two main terms that are used on this topic. The first is *system*. We have the system as a container with its defined structure where *items* are kept organized. *Items* as in the world of unicycling and under this topic means *skills*. Therefore chapter 3 (Skill Lists on page 5) describes sources of skills where as chapter 4 (Attempts on Structuring Unicycling Skills on page 6) describes systems.

For better readability I also attached some words in the glossary at the end of the document. This should help to determine the boundaries of some vocabs.

2.2 Goal

Create a solid structure, that would be the base for all products built on it. To name a few: Skill Level and Judging Systems. Even trainers and unicyclists profit by such a structure.

2.3 Background

There is no global structure for unicycling skills, really! Current systems lack functionality, which disqualifies them (see criticism for each in chapter 4).

2.4 Plan

In this document, I will introduce current attempts on structuring skill systems and describe them. I lay out their organisational units and how they are used for structuring unicycling skills. I collect pros and cons for each of those, showing their lacks. An interim conclusion should give information about the collected leaks and formulate requirements for a new approach, which I will show you in the direct followed chapter. An overall conclusion will round this document.

Future Plan:

1. Publish this document, receive some public feedback, find problematic edges, provide solutions. This is probably how you stumbled upon this document.
2. Gather a first struct foundation and find a name for the new system.
3. Publish a second document, with detailed information about the structs, which are currently available, how to add new and solve common problems that could come up.

3 Skill Lists

Skills are the items, that are crying for an organisation. Though skills are wide range and to give some examples of what I'm talking about in this document, here are some lists, that cover some skills and could be used as references for systems that do not explicitly list skills.

3.1 IUF Standard Skill List

The IUF Standard Skill List is one of the most completed lists I found. It covers riding abilities, mounts, tricks and transitions but is mainly focused on freestyle.

3.2 Leo Vandewoijstine's repository

The most advanced video-repository of skills. Mostly inspired by the IUF Standard Skill List. Available here: <http://www.unicyclist.org/cont/archive.cfm>

3.3 einradfahren.de Trixionary 2.0

The einradfahren.de Trixionary archives some tricks and mounts of different disciplines. See criticism in 4.2.3 Criticism on page 10.

3.4 Unicyclopedia

Even the unicyclopedia has a weird sorting, the unicyclopedia archives skills that cover a wide range of disciplines. See criticism in 4.3.3 Criticism on page 13.

4 Attempts on Structuring Unicycling Skills

There has been some approaches on structuring unicycling skills. I will give a little introduction to each system, show the organisation of skills and give a criticism at the end.

4.1 IUF Freestyle Judging Sheet

4.1.1 Introduction

This categorization is applicable for Freestyle, and is its mainly purpose, although there is place for other skills. Skills are put into different categories. Flatland and Street Tricks are covered with Hopping, no further division here, where there is *actually* no need for it.

As this system is used for technical Freestyle Judging, there is a one to one mapping between the skills and the category, which makes it easy for judges to place their marks to allow fast handling.

Disclaimer: This system has its intended use for freestyle judging and neither has the emotion to organize skills globally. Though its working in its own macrocosm, is this working out properly? We'll see.

4.1.2 Organisation

Disclaimer: The system does not explicitly define skills for each category, though I just filled in some tricks in each category, to give a little overview of what is kept where. There is no explicit filter where to put which trick.

Walk the Wheel

- Wheel-Walk
- 1ft Wheel-Walk
- Kosh-Kosh
- Hand-Walk
- Spoke Walk (with the instep)

1ft

- 1ft
- Cross-Over

Seat-Out

- Seat-in-front
- Seat-in-back
- sif 1ft
- Drag-Seat in front
- Drag-Seat in back
- Seat-on-Side
- Side Ride

Idling

- Idling
- Crank-Idle
- 1ft-Idle
- Seat-on-Side Idle

Spins & Pirouettes

- Spin

- 1ft-Spin
- Gliding-Spin
- Pirouette
- Quick-Turns
- 360°-Spin + 1rev (Japanese got name for that?)

Glides & Coasts

- Gliding
- Coasting
- 1ft Coasting
- Stand-Up Gliding
- Stand-Up Gliding 1ft ext.
- Stand-Up Gliding 1ft Arabesque
- Stand-Up Coasting
- Stand-Up Coasting 1ft ext.

Stand-Up Walks

- Stand-Up Wheel Walk
- Stand-Up Kosh-Kosh
- Stand-Up Seat-on-Side Walk

Hopping

- Unispins
- Hoptwists
- Air-time (Just jump)
- Crankflips

Stationary

- Still stand

Other

4.1.3 Criticism

4.1.3.1 Pro

- Solid distinction between different categories.
- For new skills there is the 'Other', but you could take it as 'undefined'

4.1.3.2 Contra

- Some skills belong to two different groups, e.g. 1ft Seat in-front riding could belong to 1ft-riding and Seat-out riding, which the system isn't capable of.
- Transitions: Transitions are not included in the above structure yet. They appear at a different section in the judging sheet. Even though when somebody is saying „I'm learning Stand-Up Gliding“, they mostly mean they try to learn gliding to stand-up gliding, or while riding jumping into stand-up gliding...

Obviously there is no variety value within the transitions judging part. They count the transitions and give them mastery points, but no explicit value on the variety. This is captured by the categories, but where to put them? Do they count as the 'From' trick or the 'To' trick? Confusing is as well, when they speak of lets say 'drag-seat in front' they actually mean 3 different things at a whole: 1. Transition into drag-seat in-front (Mostly SIF to drag-seat by letting fall down the seat), 2. Riding drag-seat in-front, 3. Pickup with whatever method (transition back). For sure it makes no sense from a riders perspective to include a trick in their routine they can't go in or out but the way judges treat their performance is critical as well. Based on the drag-seat sample above, imagine one is riding drag-seat in-front (transition in, riding) and dismounts gracefully,

the rider doesn't get a value for drag-seat. How does a judge could represent his opinion against the rider, like: „no you didn't do drag-seat.“ where it is obvious that the rider was riding drag-seat.

- Freestyle-only? The shown method works for the Freestyle Judging Sheet, because it's intended use. Unfortunately this can't be used for a global structure, but parts could be used for Freestyle skills.

Also keep in mind, that skills are performed differently throughout various disciplines.

Remember Hoptwists and compare the performance of (Japanese) Freestylers, Streeters and Flatlanders.

4.2 einradfahren.de Trixionary 2.0

4.2.1 Introduction

I created the Trixionary with its main purpose to help unicyclists learning skills. The Trixionary collects skills and gives explanations on performing, learning, helping and teaching those. The collection of skills got a strict distinction between disciplines. Wherein skills are sorted in categories. For each skill there is an option of giving dependencies for this skill, e.g. if you are looking for 'Stand up wheel-walk' you will find a dependency on '1ft Wheel-Walk' and is read as „If you want to learn Stand Walk, it is better if you could do 1ft Wheel Walk before learning this skill“.

Every unicyclist registered at einradfahren.de is able to commit to this repository. They are given the opportunity to create new tricks, edit tricks (independent from its original creator), writing explanations.

4.2.2 Organisation

4.2.2.1 Basic-Riding

- Riding
- Riding Backwards
- Riding Turns/Circles

4.2.2.2 Freestyle

Wheel-Walk

- Wheel-Walk
- 1ft Wheel-Walk
- Hand Walk
- Kosh-Kosh

1ft

- 1ft
- Cross-Over

Gliding & Coasting

- 1ft Coasting
- 2ft Coasting
- Gliding

Seat-Out

- Riding Seat in-front
- Riding Seat in-back
- Seat-on-side
- Drag Seat in-front

- Drag Seat in-back
- Pick Seat in-front
- Pickup Seat in-back
- Pickup Seat in-back with heel

Spins & Pirouettes

- Spin
- Pirouette
- 1ft Spin
- 1ft Spin ext.
- Seat-on-Side Spin

Stand Up Tricks

- Stand Up Wheel Walk
- Stand Up Kosh Kosh
- Seat-on-Side Stand Up Wheel Walk
- Stand Up Gliding
- Stand Up Gliding-c
- Stand Up Coasting
- Stand Up Coasting 1ft ext.

4.2.2.3 Mounts

Category for all types of mounts.

4.2.2.4 Trial

- Hopping
- Side Hop
- Rolling Hop

4.2.2.5 Street

Disclaimer: By the time of collecting skills for the Trixionary everything Flatland and Street was considered as 'Street' because the term of Flatland wasn't established at that time.

- No Footer
- One Footer
- Superman
- Tire Grab
- Backside Grab
- Superman
- E.T./Rotator
- Footplant
- Bail
- Slam

Unispins

- Unispin
- Outspin
- Inward Unispin
- Smallspin
- Bigspin

Hoptwists

- Hoptwist

- Lookback
- Shifty

Varials

- Varial
- Body Varial
- Full Varial
- 360° Varial

Flip Tricks

- Smallflip
- Crankflip
- Doubleflip
- Tripleflip
- Varialflip
- Hickflip
- Treyflip
- Backflip
- Doublebackflip
- Lateflip
- Outbackflip
- Outflip
- Inward Small Flip
- 180flip
- Donkeykick
- Sex Change

Plants

-

Grinds

-

Stationary

- Hopping on Wheel
- Legwrap
- Seat Bounce
- Seat Drop
- Seatwrap

4.2.3 Criticism

4.2.3.1 Pro

- Solid distinction between disciplines and categories.
- Covers 'all' riding, by having discipline-distinction at first sort-level.
- Dependencies for skills is a big plus.

4.2.3.2 Contra

- Some skills belong to two different groups, e.g. 1ft Seat in-front riding could belong to 1ft-riding and Seat-out riding, which the system isn't capable of.
- Transitions: Transitions are not included in the above structure.

4.3 Unicyclopedia

4.3.1 Introduction

The Unicyclopedia is a community based project. It is hosted at wikibooks. You could refer to the Unicyclopedia as the unicycle-wikipedia. Regarding Skills, they are sorted in disciplines.

4.3.2 Organisation

4.3.2.1 Freestyle

Basic Skills

- Riding 1ft
- Idling
- 1ft Idling
- Backward Riding
- Rolling Hops

Seat Out Skills

- Stomach on seat
- Seat in-front
- Seat in-back
- Seat on side
- Chin on seat
- Seat in-front 1ft
- Drag seat in-front & in-back
- Side ride

Wheel Walking Skills

- Wheel Walk
- 1ft Wheel Walk
- Standup Wheel Walk
- Backward Wheel Walk
- Backward Wheel Walk 1ft
- Backward Spoke Walk
- Forward Spoke Walk
- Koosh-Koosh
- 1ft backward lace walk
- 1ft forward lace walk
- Sideways Wheel Walk
- Hand Wheel Walk

Miscellaneous Skills

- Backward 1ft Riding
- Gliding
- Coasting
- Coasting standing on saddle
- Handride

Stationary Skills

- Hop
- Spins
- Pirouettes

- Hopping standing on wheel
- Side Hopping
- Unispins
- Seat Drop
- Crank Idle

Mounts

- to idle
- to idle 1ft
- to idle 1ft ext

- Rolling

- Jump
- Suicide
- Reverse
- Side Mount
- Side Jump to Wheel Walk
- Pickup
- Kickup

4.3.2.2 Street

Unispins

- 180 – 1080 Unispin

Varials

- Body Varial
- Varial
- Smallspin
- Bigspin
- Full Varial

Flip Tricks

- Revolution/Rotator
- Crankflip
- Doubleflip
- Tripleflip
- Crankbackflip
- Doublebackflip
- Triplebackflip
- 180 flip
- 180 backflip
- Hickflip
- Donkey Hick
- Hickbackflip
- Treyflip
- Inward Flip
- Varial Flips
- Varial Backflips
- Sex-Change Flips
- Donkey Kick
- Footplants

Flatland Tricks

- Superman
- Seatdrop

- Wraps

4.3.2.3 Trials

- Crank Grabs
- Pedal Grab
- High Hop
- Gapping
- Rolling Hops
- Drops
- Stairs
- Mounting Skinnies
- Riding Skinnies

4.3.2.4 Muni

- Basic technic
- Rolling out of drops
- Hopping in any pedal orientation
- Riding in snow
- Northshore riding
- Nightrides
- Effective braking

4.3.3 Criticism

4.3.3.1 Pro

- There is a lot of information about different tricks
- One of the most advanced list of tricks on the internet with descriptions¹
- Covers the most advanced riding with trials and even muni skills
- Street/Flatland Skill Levels :)

4.3.3.2 Contra

Due to its online community collaboration the projects information sorting is a mess. I don't know if there is a leading author, but one would definitely help there to organize the authors.

- Duplicates: Tricks are duplicated across different disciplines and even within different categories of one discipline.
- Lack of consistency: Some tricks are put into various categories, where they make no sense!
- No clear words. E.g. the Street Page is the most weird page, where it mixes skill and descriptions and all means almost the same.
- Some skills belong to two different groups, e.g. 1ft Seat in-front riding could belong to 1ft-riding and Seat-out riding, because the system isn't capable of.
- Transitions: Transitions are not included in the above structure.

¹ Others are Leo's online archive and the Standard- Skill List of the IUF Competition Rules. See Skill Lists on page 5

5 Interim Conclusion

Summing up the criticism for each system, it turns out, that all attempts defining groups, categories, whatever and later on put tricks in their earlier defined organisational units. This leads to the common problem of the 1:1 mapping of one trick to one category. I remember when some kids I trained wondered when I told them riding 1ft Seat in-front is covered by the seat-out category. Actually they were right, when they complained it also belongs to 1ft-riding.

The second point is about transitions. None of the system shares attention to transitions as they are worth to put value on. The IUF Freestyle Judging Sheet measures the amount of transitions but not the variety.

6 Solution: Skill Structs

Here is my solution :)

6.1 Requirements

I try to keep the requirements as minimal as possible:

- Allow n:m mapping between skill and organisational unit
- Include skill, transitions and mounts (I haven't talked about that topic in particular, but should be payed attention as well)
- Works across all disciplines

6.2 Implementation

Unlike others I define organisational units first, I call them „struct“. Structs may be dependent on each other, e.g. 'Rolling Mount' is dependent on 'Mount' as it is more special (See list in 6.3 Structs). Now the tricky part. Instead of putting tricks into the units, we assign the structs for each skill (See examples in 6.4 Examples). Structs also may be *abstract*, which means they can't be assigned to skills but can be used for grouping (similar) structs.

6.3 Structs

Here is a first aggregation of some possible structs (the list doesn't have the emotion to be complete):

- *Riding (abstract)*
 - Circle
 - Figure-8
 - Hopping in any pedal orientation ²
 - Backwards
- Mount
 - Rolling Mount
- Transition
- 1ft
- Wheel-Walk
- Stand-Up
- Gliding
- Coasting
- Seat-Out
- Hopping
- Unispin
- Crankflip
- Spin
- Pirouette
- Wraps
 - Rolling Wraps
- Grinds

² http://en.wikibooks.org/wiki/The_Unicyclopedia/Muni

6.4 Examples

here are some exemplary assignments:

- 1ft Wheel-Walk: [Wheel-Walk](#)
- Stand-Up Wheel-Walk: [Wheel-Walk](#), [Stand-Up](#)
- Cross-Over: [1ft](#)
- Drag-Seat: [Seat-Out](#)
- Hickflip: [Unispin](#), [Crankflip](#)
- Stand-Up Gliding: [Stand-Up](#), [Gliding](#)
- 1ft Wheel-Walk to Stand-Up Wheel-Walk: [Wheel-Walk](#), [Stand-Up](#), [Transition](#)
- Gliding to Stand-Up Gliding: [Gliding](#), [Stand-Up](#), [Transition](#)
- Stand-Up Gliding Pirouette: [Stand-Up](#), [Gliding](#), [Pirouette](#)
- Riding to Seat-out in-front: [Seat-Out](#), [Transition](#)³

6.5 Benefits

- N:M Mapping between a skill and structs
- Valid across different disciplines
- Transitions are easily found by all skills that are assigned with the Transition struct
- Extensible, just define new structs for new skills (I expect some creative people to do so, as we have seen with flatland tricks the past years :-).

6.6 Criticism

Oh, that is up to you now :)

³ Transitions from and into normal riding should be considered as special cases, but are obviously transitions.

7 Conclusion

I described systems structuring unicycle skills. Showed the lack of functionality they are bound with. I formulated a minimal set of requirements for a new system, using structs as organisational units and give examples on how the new system works by assigning structs to skills.

Now the discussion is out to the public and I really love to receive „likes“ (haha, no not really), criticism or any other form of constructive feedback. Either by email gossi@einradfahren.de twitter [@unistylr](https://twitter.com/unistylr), on facebook <http://www.facebook.com/tgossmann> on the blog post(s) respectively the forums posts on unicyclist.com where I will publish this document, too. Thank you so much in advance!

8 Resources

- IUF Freestyle Technical Judging Sheet, 2008
- IUF Rulebook, 2008
- Leo Vandewoijstine, <http://www.unicyclist.org/cont/archive.cfm>
- Trixionary, http://einradfahren.de/index.php?module=mod_trixionary
- Unicyclopedia, http://en.wikibooks.org/wiki/The_Unicyclopedia

9 Glossary

IUF

The IUF stands for International Unicycling Federation. The Homepage is accessible at <http://iufinc.org>

Mount

Mounts are skills that turn a non-unicyclist into a unicyclist.

Skill

Is an ability that a unicyclist can do on a unicycle. This could be a riding ability or a trick.

Transition

Transition means going from one trick into another.

Trick

Tricks are special abilities, that are performed on a unicycle.