

# BREYDON's breydon.id.au

Sunday 04 March 2023

## Contents

<b>1</b>	<b>About me</b>	<b>7</b>
1.1	Doing things for you . . . . .	7
1.2	Tharts, meed, & crit . . . . .	7
1.3	Place & déplacement . . . . .	7
1.4	Re-creation . . . . .	8
1.5	Music . . . . .	9
1.6	What else? . . . . .	9
<b>2</b>	<b>Pronouns &amp; titles</b>	<b>9</b>
<b>3</b>	<b>The Most Lackadaisical Press-Clipping Scrapbook</b>	<b>10</b>
3.1	Recording Engineering . . . . .	10
3.2	Charming and Interesting . . . . .	10
3.3	Sporting Playing . . . . .	10
<b>4</b>	<b>Résumé-bé, Bébé</b>	<b>10</b>
<b>5</b>	<b>Contact information</b>	<b>10</b>
5.1	In person . . . . .	12
5.2	Encrypted media . . . . .	12
5.3	Ordinary post . . . . .	12
5.4	Email . . . . .	12
5.5	Other ways of interacting over the Internet or its successors or antecedents or contemporaries . . . . .	13
5.6	Anything else . . . . .	13
<b>6</b>	<b>Old news</b>	<b>13</b>
6.1	Latest . . . . .	13
6.2	March 2021 . . . . .	14
6.3	July 2021 . . . . .	15
<b>7</b>	<b>Comix</b>	<b>15</b>
7.1	FLUID DYNAMICS (2017) . . . . .	15
7.2	AFTER I UNDERSHARED AND YOU OVERTOOK (2015) . .	16

<b>8 FLUID DYNAMICS (2017)</b>	<b>16</b>
8.1 Download the comic . . . . .	16
8.2 Historical context . . . . .	16
8.3 Transcript . . . . .	18
<b>9 After, things I'd be</b>	<b>20</b>
<b>10 Supports to pursue</b>	<b>20</b>
10.1 Mobility . . . . .	20
10.2 Communication . . . . .	21
10.3 Dexterity . . . . .	21
10.4 Etc . . . . .	22
10.5 Wheelchair-related tools . . . . .	23
<b>11 To locomote</b>	<b>24</b>
11.1 Advice . . . . .	24
11.2 Lived experience . . . . .	25
<b>12 Wheelchair trials</b>	<b>25</b>
12.1 To fit . . . . .	25
12.2 Seeking . . . . .	25
12.3 Tried . . . . .	26
12.4 Would like to try . . . . .	28
<b>13 Wheelchair manoeuvrability and tight spaces</b>	<b>29</b>
13.1 Situation . . . . .	29
13.2 Qualities . . . . .	29
13.3 Features . . . . .	30
13.4 Candidates for manoeuvrability and tight spaces . . . . .	31
<b>14 Wheelchair ease of trekking</b>	<b>31</b>
14.1 Situation . . . . .	31
14.2 Qualities . . . . .	32
14.3 Features . . . . .	32
14.4 Candidates for ease of trekking . . . . .	33
<b>15 Aftermarket lever drives</b>	<b>34</b>
15.1 Would like to try . . . . .	34
<b>16 Third-wheel attachments</b>	<b>34</b>
16.1 Would like to try . . . . .	34
<b>17 Stricker trials</b>	<b>34</b>
17.1 Would like to try . . . . .	35
<b>18 Soft-surface runners</b>	<b>35</b>
18.1 Would like to try . . . . .	35
<b>19 FreedomTrax trials</b>	<b>35</b>
19.1 Would like to try . . . . .	35
<b>20 L.F.C. trials</b>	<b>36</b>

<b>21 GRIT trials</b>	<b>36</b>
21.1 Tried . . . . .	36
21.2 Would like to try . . . . .	36
<b>22 GRIT Freedom Chair Spartan</b>	<b>36</b>
22.1 Assessment . . . . .	38
22.2 Further reading . . . . .	39
<b>23 RMA trials</b>	<b>39</b>
23.1 Would like to try . . . . .	40
<b>24 Trekinetic trials</b>	<b>40</b>
24.1 Would like to try . . . . .	40
<b>25 Lasher Sport trials</b>	<b>40</b>
25.1 Would like to try . . . . .	40
<b>26 Mountain Trike trials</b>	<b>41</b>
26.1 Would like to try . . . . .	41
<b>27 Motivation trials</b>	<b>41</b>
27.1 Tried . . . . .	41
27.2 Would like to try . . . . .	41
27.3 Further reading . . . . .	42
<b>28 Motivation Multisport</b>	<b>42</b>
28.1 Assessment . . . . .	42
28.2 Further reading . . . . .	42
<b>29 Ottobock trials</b>	<b>45</b>
29.1 Tried . . . . .	45
29.2 Would like to try . . . . .	45
<b>30 Ottobock unknown folder</b>	<b>45</b>
30.1 Assessment . . . . .	45
30.2 Further reading . . . . .	47
<b>31 Kuschall trials</b>	<b>47</b>
31.1 Tried . . . . .	47
31.2 Would like to try . . . . .	48
31.3 Further reading . . . . .	48
<b>32 Kuschall KSL</b>	<b>48</b>
32.1 Assessment . . . . .	48
32.2 Further reading . . . . .	51
<b>33 R.G.K. trials</b>	<b>51</b>
33.1 Tried . . . . .	51
33.2 Would like to try . . . . .	51
33.3 Further reading . . . . .	51

<b>34 R.G.K. Octane Sub4</b>	<b>51</b>
34.1 Assessment . . . . .	52
34.2 Further reading . . . . .	54
<b>35 R.G.K. Tiga FX</b>	<b>54</b>
35.1 Assessment . . . . .	54
35.2 Further reading . . . . .	55
<b>36 Box trials</b>	<b>56</b>
36.1 Would like to try . . . . .	56
<b>37 Melrose trials</b>	<b>56</b>
37.1 Tried . . . . .	56
37.2 Further reading . . . . .	56
<b>38 Melrose Scorpion</b>	<b>56</b>
38.1 Assessment . . . . .	57
38.2 Further reading . . . . .	57
<b>39 Melrose Hornet</b>	<b>57</b>
39.1 Assessment . . . . .	57
39.2 Further reading . . . . .	59
<b>40 Melrose Hawk Ultra</b>	<b>59</b>
40.1 Assessment . . . . .	59
40.2 Further reading . . . . .	61
<b>41 Ram Wheelchairs trials</b>	<b>61</b>
41.1 Would like to try . . . . .	61
<b>42 Mogo trials</b>	<b>61</b>
<b>43 Top End trials</b>	<b>61</b>
43.1 Would like to try . . . . .	61
<b>44 Karma trials</b>	<b>62</b>
44.1 Tried . . . . .	62
<b>45 Karma Ergo Lite 2</b>	<b>62</b>
45.1 Assessment . . . . .	62
45.2 Further reading . . . . .	63
<b>46 Karma Eagle</b>	<b>63</b>
46.1 Assessment . . . . .	63
<b>47 TiLite trials</b>	<b>64</b>
47.1 Tried . . . . .	64
47.2 Further reading . . . . .	65
<b>48 TiLite 2GX</b>	<b>65</b>
48.1 Assessment . . . . .	65
48.2 Further reading . . . . .	66

<b>49 TiLite ZRA</b>	<b>66</b>
49.1 Assessment . . . . .	66
49.2 Further reading . . . . .	67
<b>50 ART CHAI</b>	<b>67</b>
50.1 The blend . . . . .	67
<b>51 ART CHAI rims for rims</b>	<b>74</b>
51.1 <i>Rim</i> rims or rim-rims? . . . . .	74
51.2 What for? Or: Alright, but rims for rims for what? . . . . .	74
51.3 Quirks of construction . . . . .	76
51.4 Parts to coördinate . . . . .	76
51.5 Sizing . . . . .	77
51.6 Appendix: Tyre sizes, in order of my preference for immediate-term usage (October 2022) . . . . .	78
51.7 Appendix: Ordering parts . . . . .	79
<b>52 Been reading</b>	<b>79</b>
<b>53 Internet housekeeping</b>	<b>81</b>
53.1 Agenda . . . . .	81
<b>54 Protocols, formats, and accessibility</b>	<b>81</b>
54.1 Formats . . . . .	81
54.2 Protocols . . . . .	81
54.3 Accessibility . . . . .	81
<b>55 Privacy and security</b>	<b>82</b>
55.1 Stance . . . . .	82
55.2 Scripts, cookies, embedded trickery and third-party webmuck . . . . .	82
<b>56 Internet housekeeping methods</b>	<b>83</b>
<b>57 Methods of writing internet</b>	<b>83</b>
57.1 Background . . . . .	83
57.2 Software . . . . .	83
<b>58 Methods of captioning internet</b>	<b>84</b>
58.1 Placement . . . . .	85
58.2 Dynamic subtitles . . . . .	85
58.3 Multilingualism . . . . .	86
<b>59 Methods of serving internet</b>	<b>86</b>
59.1 Kittens . . . . .	86
59.2 Starting . . . . .	86
59.3 Choosing a server . . . . .	87

<b>60 Patchwork sitemap</b>	<b>87</b>
60.1 BREYDON's	88
60.2 About me	88
60.3 Contact information	88
60.4 Old news	88
60.5 Caramel BREYDON	88
60.6 Comix	88
60.7 "Adaminaby" or Marginalian Capital Territory	88
60.8 Visible mending	88
60.9 After, things I'd be	89
60.10 To locomote	89
60.11 'Putting	90
60.12 sports	90
60.13 Been reading	91
60.14 Internet housekeeping	91

## Personal homepage

breydon.id.au

Hi! Welcome to my personal gopher hole, gemini capsule, and website.

If you are curious about those, you can check behind the scenes with internet housekeeping; or about me, with about me.

Should you wish to be in touch, please do send your message...

- by post to P0 Box 107, Clarinda, Vic 3169, Australia
- over Signal with +61 480 253 456
- or by email through ~wrul/discreetly@lists.sr.ht

Some more detailed contact information is available, too.

For periodic updates, please refer to the site news (and olds). A fuller table of contents can be found in a patchwork sitemap.

## Acknowledgement of Country

Most of this material is formed on biik of the Kulin alliance; much of the rest, on Country of their fellow Blak nations.

Always was, always will be, Aboriginal land.

I would like to pay my respects to Aboriginal and Zenadth Kes people of and in these places — especially to Elders — and to all First Nations communities around the world to whose lands, waters, or skies these words may extend.

## Copyright notice

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Reader contributions remain their own, and are used only with the authors' and performers' permission.

# All

breydon.id.au/all

Monday 07 February 2022.

Formats include Org, plain text, Gemtext, Hypertext Markup Language (H.T.M.L.), and Portable Document Format (P.D.F.).

Sorry, hyperlinks in these omnibus files are largely non-functional.

## 1 About me

breydon.id.au/about

BREYDON's a surname, which came around me through family who lived the mid twentieth-century in Euro Yuroke Saint Kilda, a salty sigh east of Nairm. I too am calling from cool Birrarung-ga, on Boonwurrung and Woiwurrung Country. My pronouns are “they” in Englishes, “yel” in Frenches, and gender-neutral wherever.

[level-1] [level-1]0

### 1.1 Doing things for you

For those who'd like to hire me—I'm pretty alright at public speaking; facilitating productions in the arts or media; and consulting on inclusivity anywhere.

If this sounds useful, or you rightly suspect there are other grouse things I could do for you, too, just sing out.

### 1.2 Tharts, meed, & crit

I like to examine, create, and facilitate works that inspire stretchy conceptualisations of theatre.

My practice in visual arts has blended hand-drawn animation, dark-room photography, comics, sculpture, digital performance, and cartography.

As a writer, critically, I think a lot about physicality as sociological text: whether that be in textures of inhabitation; the kinetics to communication; infrastructural, industrial and agricultural manifestations of politics; or continua merging “beings” and “surroundings”.

In aural media, I especially love music, subaltern story-telling, nudging techniques around, and to pick—as a nesting bird with a coir pot—at field-recording/–re-forming.

### 1.3 Place & déplacement

Speaking of being out in the field, I love organic gardening (particularly bolstering indigenous habitat), bushwalking, city walking, and community radio.

I am a big appreciator of super walkable urban design, dense and intense public transport systems (particularly through electrified, decentralised rail), and the treatment of roads foremost as community space; as integral networks for trams, bicycles, other mild vehicles, and people themselves, including wildlife.

When I say “walking”, I mean wheeling chair and such, too. Appropriate provision of assistive technology is another passion; attitudes to this are so connected with issues of societal and environmental health.

The author grinning from an iced-up wheelchair sinking in its own tracks through a snow-covered park. Photographer: A Whitfield. Photo © A Whitfield.



Figure 1: Vicinity of a snowball fight. Hammersmith, February 2018.

#### 1.4 Re-creation

Possibly the world's first non-binary athlete in elite football of any code, I am acutely conscious of the denial of safe sports opportunities to marginalised



populations. I would love to connect with others yearning to fix this. And to play for play.

I enjoy skating (in chairs, on boards, or even on skates), am unreasonably fond of basketball, make an awe-filled/awful swimmer, and am fascinated by dance.

## 1.5 Music

At my most sensible, my engaging in the physical world is informed by musicality.

Formally, I am most at home on finger-tickled string instruments, playing the acoustics of a scenario, or in abstract theoretical spaces. Arranging is divine. I play piano like someone who has paid too little intellectualisation to too many forms of art music, and atonal percussion like a popoptimistic sound designer.

Despite a preference for the irrefutably physical, I can get painfully earnest about the possibilities of electronic synthesis for microtonality, adaptive musicianship, sophisticated timbral innovation, interrupting the westernisation of recorded music, and of course stagecraft.

More than anything, I struggle to accept what my motor impairments have done to my precise manifestation of rhythm, although there will be something phenomenal to touch once I begin to, for sure.

Music has far more to teach people about the universe and ourselves than we impart to it. Still, what an extraordinary repository of culture.

## 1.6 What else?

Unsurprisingly, I am deeply absorbed in the interrelated nature of community, environment, and story. I hope to continue to help nurture oral histories, t'support decolonising media (well, everything), and seeing about what better things might follow the field of "international development"; to wax enthusiastic.

No doubt I have left everything out. Please let me know if there is anything you would like covered within this gopherhole, gemini capsule or website!

Oh, and there's always The Most Lackadaisical Press-Clipping Scrapbook.  
[level-1]

## 2 Pronouns & titles

[breydon.id.au/about/pronouns](http://breydon.id.au/about/pronouns)

In Englishes and adjacent language, please refer to me by way of "they", or the dialect's normal equivalent. For example: "I am reading what their pronouns are."

Of course, second-person pronouns such as "you" are the sort to use when addressing me (whether individually or as part of a group). For example: "Your shoelace is undone, you duffer!" or "What are you lot up to?"

Use of no title with my name is appropriate.

For pronouns, titles, etc in any other language variants, please check with me directly. Thank you!

## 3 The Most Lackadaisical Press-Clipping Scrapbook

[breydon.id.au/about/press](http://breydon.id.au/about/press)

### 3.1 Recording Engineering

Erin Kyan’s *Love and Luck* is a gentle drama I recorded. Even on hiatus, *Love and Luck* continues to attract acclaim and find special places in new listeners’ hearts.

*Love and Luck* has been included in the National Film & Sound Archive of Australia, was selected as an example of “the best Australian podcasts” by the Wheeler Centre and Audiocraft’s Australian Audio Guide, wound up a finalist in the Australian Podcast Awards multiple times, and comes recommended by a slew of critics in the meedja.

### 3.2 Charming and Interesting

“Everyone’s very hungover,” begins Julia Pillai. “Let’s not beat around the bush.” The Vinyl Café is scattered with a modest but attentive audience and the panel coax them in closer... Despite everything – the hangovers, the daylight savings, the unbearable whir of the coffee machine – this panel is engaged, thoughtful and surprisingly perky.

Bridget Lutherborrow (National Young Writers’ Festival Press Room)

Another public panel of four artists. There are beanbags and a small dog in the foreground. Photo: National Young Writers’ Festival.

### 3.3 Sporting Playing

After that odd episode in which I went from lapsed social basketballer to actual St. Kilda footballer, the club told fans that “Kermie Breydon... looks like they have the making of a fantastic forward”.

## 4 Résumé-bé, Bébé

[breydon.id.au/about/rezbez](http://breydon.id.au/about/rezbez)

Here is an ancient, genericised and abridged CV—from April 2019. It comes in English, as a P.D.F. file of 104 · 6 kilobytes (kB), or its Plain  $\text{T}_{\text{E}}\text{X}$  source of 8 · 9 kB.

## 5 Contact information

[breydon.id.au/contact](http://breydon.id.au/contact)

April 2020.

Updated 05 March 2023.

[level-1] [level-1]0



Figure 2: Discussion of 'Research and Lived Experience', featuring Alison Whittaker, Kermie Breydon, Rosalind Moran, Chris Tse, and Ernest the dog. The Royal Exchange, Awabakal and Worimi Country, September 2016.

## 5.1 In person

During the COVID-19 pandemic, I will not be attending big events. If you happen to encounter me on our respective essential outings, do say hello.

## 5.2 Encrypted media

You might have my old P.G.P. public key. I am no longer using it. Encryption is prudent (vital!) stuff, but for now my priority is establishing reliable access to electronic correspondence at all. After that, a new public key should soon follow. You will find it on this page.

In the meantime, you can try sending me messages via Signal, to the number +61 480 253 456, so that they will be encrypted automatically.

## 5.3 Ordinary post

The most dependable way to contact me from a great distance is by tangible mail

K. F. Breydon  
PO Box 107  
Clarinda, VIC 3169  
Australia

## 5.4 Email

Emailing me is well worth a shot if convenient and safe for you. For accessibility, please be sure to send:

- Message bodies in plain text (rather than H.T.M.L.)
- All other essentials as small attachments

1. Attachments Please aim to keep attachments to a few hundred kilobytes in size, or less. Files which are necessarily bigger are a-okay if we arrange it in advance. Think: most production-quality audio of more than one channel or more than one minute; substantial manuscripts; high-resolution versions of photographs; and so on.

Attachments are best in file-formats which are open and (where possible) non-proprietary. This way, I will have more hope of accessing the material that you are trying to convey, or of replying in-kind.

Any content relying on hotlinks or “cloud” applications will be considered to have never been supplied! For instance: information presented as embedded images that are hosted on some web-server, or consultation processes held through Google forms. Those sorts of approaches are exclusionary, to say the least. The good news is, we can simply include the essence of our messages directly in our messages... so that’s pretty ace.

2. For those mindful of kinds of plain text If you’re wondering about character-encodings, UTF-8 is preferred; nevertheless, most other encodings are wrangleable when clearly stated.

I'm completely unfussed whether you use reflowed text or hard linebreaks. I will try my best to match your usage.

3. Email addressing My public email address is `~wrul/discreetly@lists.sr.ht`

If you would be happy for me to publish your message (in full or in part), please write [CITABLE] in the subject line.

Some guidance—to your name (as you would like to be credited), location (if you like), and their pronunciation—will be much appreciated. Include your pronouns if you have them and want them.

Other responses can also be delivered to `~wrul/discreetly@lists.sr.ht`

## 5.5 Other ways of interacting over the Internet or its successors or antecedents or contemporaries

Well-audited, free<sup>1</sup> options I am open to considering. Let me know what works for you.

Currently, on federating, web-based social media, you can get in touch `@wrul@dondon.breydon.id.au`.

## 5.6 Anything else

Thanks for taking the time to have a squiz at this page. If there is anything else you would like it to cover, please let me know.

I look forward to hearing from you! [level-1]

## 6 Old news

`breydon.id.au/olds`

Updated February 2022.

[level-1] [level-1]0

### 6.1 Latest

I would like to serve material over the amiable Gemini protocol and perhaps Gopher. Some of the leggier patches of my personal website are now separated into smaller chunks, ready for sharing the same pieces across various realms, for the minimalist and maximalist alike. Here's to a flourishing gemini capsule in 2022!

Breaking with over two decades of pecking out handcrafted H.T.M.L, the heart of the site/capsule-/hole-/pamphlet-to-be is now one reasonably elegant Org file. The sunnier styling of 2021 remains to be adapted to this new system, as regular readers will probably have noticed. The low-fuss is having a refreshing effect on me—how about you? Maybe you would like the plainness to stay?

I have been doing all this reconstructing on a pretty versatile pocket computer I am setting up. I'm also exploring the idea of a smartwatch (the Pine64 PineTime) for housing littler everyday assistive tools.

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<sup>1</sup>“Free”; meaning properly non-proprietary. I may be able to spend modestly on hosting or to support development.

Postponing a physiological directive to relearn guitar in the opposite handedness to the one I started in and to move to upright bass, I retuned my guitar strings to major third intervals from the utterly rampant harmonic framework of twelve equal divisions of pitch for every two times a reference frequency (let's say "12edope2") and tried horizontal fretless bass when my body would allow. The guitar tuned in major thirds is a modestly effective distraction from scheming about xentonicity, just intonation, and rhythm. The fretless tantalisation: not so much!

Further teasing myself, I designed a skatable, danceable, compact urban cruiser of a daychair, which I am looking forward to learning from, once it has approval to be built.

Though still fairly stuck, where possible I slip outdoors to weed, to mulch, and to lure garden beds across lawns. It rends holes at my knees and eventually into my frequently exposed socks. In recent months, I have finally exercised what was a wistful interest in visible mending on several actual garments.

## 6.2 March 2021

Previously under the heading of "News Since Mid-Late 2020".

1. Personally Lately, life here has been dominated by dealings with the National Disability Insurance Scheme. In my free time, I am building up an annotated set of machine stenography dictionaries for everyday communication, and trying to help my body to work okay.

Beginning to, in a sense, codify my idiolect has made for a vigorous period of intimately interrogating imperialist lexis and facing up to my unwitting linguistic role in legitimising colonialism. Listening, collecting, dismantling and recurating is intense work—at times tedious, with which I may never get tremendously far—but phenomenal in effect... if only on my own critical thought and my physical capacity for moving through language in a generally legible manner.

Sometimes one's first read of a particular book is such a special experience, it takes savouring to extremes. It took me months to close Keri Hulme's *The Bone People*. Many years in, I have never even finished Arundhati Roy's *The God of Small Things*. Now, I am crawling—figuratively and literally—through Emily Coates and Sarah Demer's *Physics and Dance*.

2. Publicly Shared under *To Locomote* is a condensed assemblage of some of my hard-earned, far-too-much wheelchair knowledge. I hope you, your clients, or your loved-ones can benefit!

Some old comics turned up recently: *AFTER I UNDERSHARED AND YOU OVERTOOK* and *FLUID DYNAMICS*. For the latter, I have written you some historical context and recommended several pieces of exceptional further reading and listening.

After a few years of its magazine look, this page adopts a plainer format, that it will skip more lightly across the internet to you. More pages are joining in, as they sprout updated content.

A whole new section has sprung up: on computing. Trace a journey from weary technambivalence, to life-changing research waiting in the wings, over coming months in 'Putting.

The fifth issue of thoughtful, outdoorsy favourite, Queer Out Here is here... out... queer. I tickle a goat (at the goat's request) and interview a pig, partway through Side A.

### 6.3 July 2021

Writing electronically is becoming more realistic a prospect, in more scenarios.

My physical access to the existing technology has improved.

The set of annotated stennie dictionaries I have been developing, littoral, is growing sufficient lexicon and systematic features to function (slowly) for real texts. Littoral's initial grammatical framework has got me through some urgent exchanges. Early trials of methodical compilation helped form my approaches to merging affixes, assigning briefs, and distinguishing between homophones. Now, I am bulking its English vocab up on academic literature as well.

In taking stenographed notes to boost baby-littoral's relevance, I've been raptly distracted by B. Ajani Brannum's BAROT series, "combining tarot, performance criticism, and cultural somatics".

Greetings also from the middles of Mullumbimby, by Melissa Lucashenko; Hoedowns, Reels, and Frolics: Roots and Branches of Southern Appalachian Dance, by Phil Jamison; Transgender Marxism, edited by Jules Joanne Gleeson and Elle O'Rourke; and the inaugural issue of kindling & sage, edited by Natalia García.

I am thinking of picking through the titles referenced in Kehinde Andrews' The New Age of Empire: How Racism & Colonialism Still Rule the World, a rickety but compelling lecture, which excluded huge and pertinent questions while citing pivotal works on them!

Still stranded indoors without a daychair, I've been having moments of whizzing through chapters of books, slogging through podcasts, or dagging around with electronic flashcards.

I have fallen into low-key study of language-in-its-own-right again. Perhaps the most surprisingly transformative has been becoming that bit better acquainted with jōyō kanji, through Philippe Daouadi's script-drilling application, Kakugo. Despite the software for easy codeswitching not yet being written, (at least in terms of overall coverage) even stark gulfs between language variants a set of machine stenography dictionaries can simply creep across.

The reprieve on my hands that steno facilities have offered has allowed me to get back into (small spurts of) drawing, as well. I joined a zine club online. It's been lovely! [level-1]

## 7 Comix

breydon.id.au/comix

July 2021.

Some old comics turned up, recently.

### 7.1 FLUID DYNAMICS (2017)

Aqueous allegory for a human rights movement.

## 7.2 AFTER I UNDERSHARED AND YOU OVERTOOK (2015)

(560 kB PDF)

8 pages, monochrome

Quiet quest for a lost soccerball.

## 8 FLUID DYNAMICS (2017)

[breydon.id.au/comix/fluid](http://breydon.id.au/comix/fluid)

March 2021.

Updated 20 July 2021.

A three-page comic from DEAR EATEN FISH letter. ii.

In a comic, a fish muses on its own wateriness.

[level-1] [level-1]0

### 8.1 Download the comic

2 · 4 MB P.D.F. file: Fluid Dynamics (plus coverpage)

Read it, teach it, critique it, translate it, adapt it, share it, or take comfort in it. If you are in a position to do so, please contribute something to refugee rights movements in your region.

The comic Fluid Dynamics © 2017 by Kermie F. Breydon (they/them/their) is licenced under a Creative Commons BY-NC-SA 4.0 License. Individual licences under more permissive terms are available by arrangement.

### 8.2 Historical context

Dear Eaten Fish was “an artistic open letter of love, defiance and solidarity from Australia to Manus Island”, compiled by Jini Maxwell for fellow cartoonist, Ali Dorani. The beautiful, blue-risographed letter ii debuted at the National Gallery of Victoria’s 2017 Melbourne Art Book Fair, with full proceeds from sales of the zine helping finance healthcare urgently needed for refugees in Port Moresby.

The Australian government had illegally imprisoned Ali in its notorious system of concentration camps. Taking on the pen-name Eaten Fish, Ali reported from the inside through his art. His frank, big-hearted cartoons exposed harassment and violence, and encouraged international condemnation of Australia’s systemic human rights abuses towards people seeking asylum. By 2017, Eaten Fish was in dire need of complex, specialised medical treatment. The Dear Eaten Fish zines arose from a broader campaign to get him freed and properly supported.

Ali was finally hospitalised later that year. He went on to find refuge in Norway. The shutdown of the Manus compound, where he had been kept prisoner, would be protracted and fraught. For many immediate victims of Australia’s macabre immigration policies, the struggle for freedom and for safety continues on into a new decade, in other institutions. Meanwhile, the political precedent for responding to appeals for safe haven with industrialised torture lingers in the global conscience. So too does the capacity for kindness and accountability.

Contemporary accounts of the period may be found in works such as these:



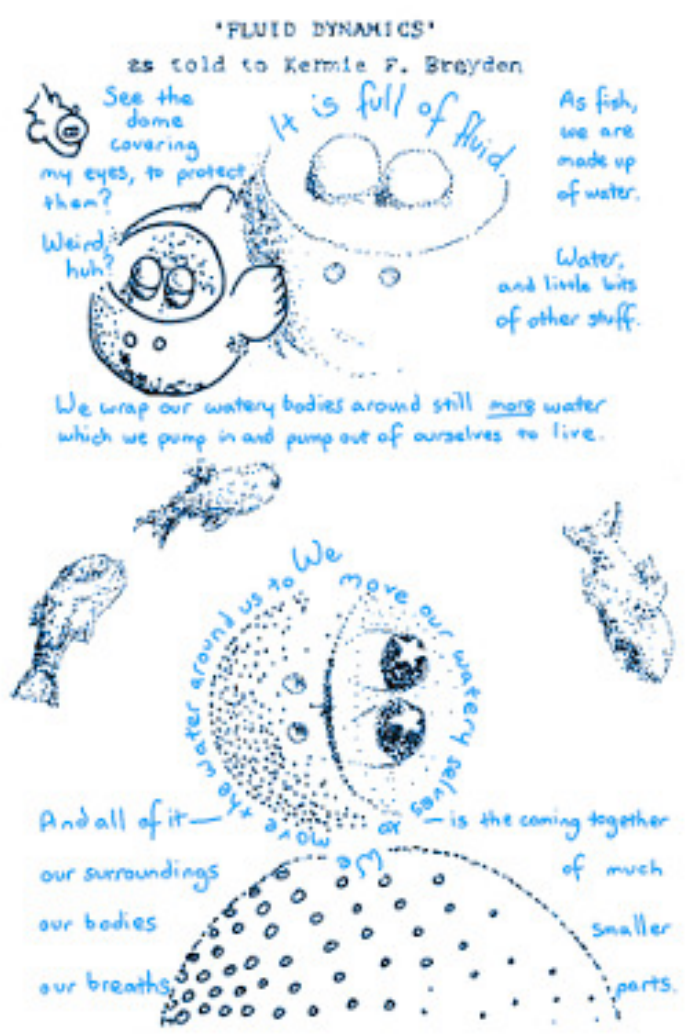


Figure 3: Excerpt from FLUID DYNAMICS. Narrm, March 2017.

- Behrouz Boochani, translated by Omid Tofighian, *No Friend But The Mountains: Writing from Manus Prison*, Picador Australia, 2019.
- Helier Cheung, ‘Ali Dorani: Iranian cartoonist on the drawings that saved his life’, BBC News, 26 May 2019.
- Madeline Gleeson, *Offshore: Behind the wire on Manus and Nauru*, New-South, 2016.
- Abdul Aziz Muhamat and Michael Green, *The Messenger, Behind The Wire and The Wheeler Centre*, 2017 – 2019.

### 8.3 Transcript

‘FLUID DYNAMICS’ as told to Kermie F. Breydon

A deep-sea fish, *Macropinna microstoma*, models its distinctive facial anatomy. Text eddies across the ocean, in sympathy with its ideas.

MACROPINNA MICROSTOMA:

See the dome covering my eyes, to protect them?

Weird, huh?

It is full of fluid.

As fish, we are made up of water.

Water, and little bits of other stuff.

We wrap our watery bodies around still more water which we pump in and pump out of ourselves to live.

The fish performs gentle acrobatics. Bold outlines have made way for stippled shadows, which gradually present as tiny individual blobs. Phrases loop back on themselves, as the fish propels itself around in a slow barrel roll.

MACROPINNA MICROSTOMA:

We

move our watery selves to

We

move the water around us to

And all of it— —is the coming together

our surroundings of much

our bodies smaller

our breaths parts.

Scattered particles funnel together into a mass of demonstrators.

PROTESTING PARTICLES:

Bring them here!

Close the camps!

We can’t stand by!

MACROPINNA MICROSTOMA:

When lots of bodies come very, very close together...

The crowd starts to move like a liquid.

Actually, if there is an extraordinary amount of pressure, the liquid becomes like a solid. (Never pack people too tightly!) To help keep everyone safe at big events, organisers put in barriers to interrupt the rippling

turbulence chaos  
that otherwise  
waves  
spreads through huge crowds

The text and particles are demonstrating the fish's words.

MACROPINNA MICROSTOMA:

I hear a similar thing happens, where people can pour a cupful of dry seeds. Each tiny seed is like one person carried along by the many around them.

The fish swims on. It is little, against the void.

MACROPINNA MICROSTOMA:

Deep in the ocean I am alone a lot.  
Where are my fellow pips and pulses?

Distant squiggles of energy.

MACROPINNA MICROSTOMA:

Maybe I am tinier. Like an atom.  
There can be big gaps between atoms.

The fish and distant pulses are in a vast dance together.

MACROPINNA MICROSTOMA:

Or maybe I am smaller still.  
Drifting in the atom.  
A crucial part. One of many. All us waves.  
Then I feel like...  
... we are full of gaps and wateriness...  
...but also, our world, our "water",  
is made out of us.

This conclusion is underlined by a journal-style author bio:

Macropinna microstoma is an amateur physicist from the Northern Pacific. It likes jellies.

[level-1]

## 9 After, things I'd be

breydon.id.au/after

March 2021.

At present this section is mainly assistive tech / relating to the National Disability Insurance Scheme.

## 10 Supports to pursue

breydon.id.au/after/supports

First published March 2021.

Updated 24 July 2021.

A list mainly of assistive tech / re: N.D.I.S. Incomplete (for privacy and tiredness).

Compare with past & current supports.

[level-1] [level-1]0

### 10.1 Mobility

I'm getting injured and falling multiple times a day, and am stuck much of the time; the present situation is ridiculously dangerous.

1. Posterior walker Not quite yet; to access trial, need chair.  
[Occupational Therapist] could organise a trial in a shop, once I can get around again.  
A posterior walker could hopefully help a bit around bathroom/kitchen sometimes.
2. Wheelchairs [Occupational Therapist] is organising trials.  
Something nimble (eg RMA SK8R or Box WCMX) and something for going places (eg GRIT Freedom Chair or Mountain Trike MT eTrike).  
I've put together more information on wheelchair trials.  
Some other wheelchair-related supports are listed below.
3. Adaptive cycle Could do with some help...  
Came across this fumeless possibility a few years back, when hunting for ways to be safely picked up and dropped off places: Nihola Flex2. It is a tricycle that can safely dink a wheelchair occupant, without the need for any sketchy transfers. The tailgate forms a ramp for easy access.  
Dutch Cargo Bike of Moorabbin seem to have some expertise in this area.
4. Portable ramp Could do with some help...  
A folding metal ramp could be an appropriate solution for doorways that open away from a step, for outdoor ledges, and for travelling/visiting inaccessible environments. I can see it helping me get reinvolved in gardening activities!

5. Commode Not for now. Nowhere to keep it.

Could be self-propelled—would need to trial (and/or to know dimensions) to determine whether can navigate doorways. Another concern is stability: not worth it if liable to tip forwards like a hospital chair, for instance.

## 10.2 Communication

...

1. Stenography Could do with some help...

Stenography requires much less dexterity, in my experience, than typing or handwriting, and usually remains practicable for longer than speech does when paralysis is setting in. I have touched on some practical considerations regarding stenography in *Typing Computers Better and Past and Current Supports*. As I obtain more appropriate equipment, compile a bigger lexicon, have more practice, and figure out means of access in different situations, I can benefit from the use of stenography more regularly

Once I have an appropriate day chair, I would like to try mounting a Georgi low-profile, split-layout stenography keyboard on it. With the right software and compatible computer (that is: phone, tablet, or similarly low-power, portable means of producing output), something like this could radically open up my opportunities for written work and spontaneous communication.

I do have a Georgi, but it is from a batch that had soldering defects, so does not work yet. I have not been up to organising repair, myself.

2. Speech-to-text Could do with more info...

May sometimes be viable when cannot type/etc. [Physio] mentioned ones that plug in? Sounds convenient.

3. Speech pathology Need to book appointment...

[Speech Pathologist] made some recommendations (detailed in report re: initial assessment of communication and swallowing).

Intending to first address communication needs for emergency situations.

## 10.3 Dexterity

...

1. Talking microwave [Support Co-ordinator] is organising this.

I would benefit immensely from one of these (eg Vision Australia Talking Microwave) for the following reasons:

- Fewer buttons/controls to accidentally knock.
- Informative aural feedback, so can concentrate on operating the controls, rather than constantly wasting up limited motor capacity on getting eyes in position to read screen.

- Volume is (easily!) adjustable. Button beeps of typical microwaves can really hurrert my head and ears, triggering sensory overload / general uselessness.
- It very kindly reminds you that the contents will be hot. And yes, sometimes I get distracted enough by all the body-wrangling to forget.
- Being a microwave: Quicker and less messy for warming up hot packs (for help with poor temperature regulation) and reheating meals independently than saucepan. Reduced burns risk compared to conventional oven.

So I'd be able to doooooo these sorts of things again.

2. Cutlery Could do with more info...

[Occupational Therapist] has suggested that a light-weight camping set could work for me (and from my experiments with other sorts, I agree). Being a mainstream product, NDIS funding for this is not a sure thing, but we could find out? (And if not, I save up).

3. Cooktop with lower burns risk Could do with more info...

Seen these in the independent living centre directory. (Always forget what they're called! "Induction"?) Would have fantastic impact on my independence cooking.

4. Music therapy [Support Co-ordinator] is looking into this.

I think percussion in particular could be really effective for finding ways to work with my difficulties controlling my hands and timing/extent of motions.

## 10.4 Etc

...

1. Dog help [Support Co-ordinator] is looking into this.

2. Art/Dance therapy [Support Co-ordinator] is looking into this.

Many possible benefits.

3. Personal alarm Could do with more info...

[Occupational Therapist] has advised of two options:

- ease of wearing and lesser tangles of the touchscreen (ugh, why not just BUTTONS) wristwatch style
- public recognisability and simplicity of operation of the lanyard style

I am leaning towards the wrist one, but continue to doubt the practicality of either. Hanging something around the neck sounds foolish when I have already had trouble from clothing getting tangled up. The touchscreen problem could be ameliorated through the use of a stylus.

It might be worth considering some kind of emergency app on a more programmable smart-watch, so that we can make the device easier to operate?

4. Masks Could do with some help...

Someday I should test an N95 mask to see:

- If I can wear one without the mask itself making me unwell? (Maybe by double-masking with cloth?)
- If N95 masks make a difference, help buy time?

Back-up thought: likely not as effective, but maybe could also try out filters in cloth masks that have pockets for these?

## 10.5 Wheelchair-related tools

There are associated things that it would be wise to obtain—some in the meanwhile. The latter items will depend on the particular chair to which they are to fit, but the first few will be applicable immediately.

1. Wheelchair gloves/cuffs [Occupational Therapist] is organising some to try.

Gloves would help protect my hands from injury, particularly friction burns and blistering. Gloves designed for those of us with reduced hand function would make propelling myself easier. These are both massive issues influencing my access to the community and health.

2. Bottle holders (for water) [Family] have organised the latter of these to try.

The obvious option might be to use water-bottle-holders (probably preferably something that can be mounted in different positions as needed). However, these are rarely any good for more than 500mL each. This capacity is insufficient for a day out, or even a decent-sized walk with the dog (particularly given that we often need to share the supply).

The more practical option is to use small oxygen-bottle-holders (up to 2L?), so as to carry enough water for a whole outing. An added advantage is that these tend to be of more robust construction than products more oriented towards takeaway coffee. Also, a 12cm diameter is big enough to cart around long equipment, such as mic stands at work. The question, though, is how to mount such large fixtures unobtrusively—and this will vary from chair to chair.

3. Pressure cushions(s) Could do with some help...

I have found shaped ones to be by far the most suitable.

4. Soft-surface runners Got a pair to fit on little castors.

These are designed to facilitate movement across packed snow. I do occasionally encounter snowy conditions, in-chair. It would be very handy

to keep a pair of Wheelblades S stashed in a backrest pouch of my day-chair when travelling. I wonder if they might also work on some sand or awkwardly plush carpets?

This sort of product would also open up my hiking prospects into exciting territory! Larger skis on off-road castors would be really interesting to try.

5. Torso harness Could do with more info...

See: notes on straps and harnesses, in Past and Current Supports.

6. LapStacker or similar Not quite yet; need chair measurements.

This is a versatile cargo strap, to keep one's hands free when shifting books, boxes, and so on. It would go some distance towards solving the problem of stuff-lugging.

7. Some way of carrying my daypack, while leaving the body uninhibited Not quite yet; need chair measurements.

Such as a pouch, basket, or sling, underseat. It might be possible to weave something out of damaged innertubes.

8. Spoke guards Not quite yet; need wheel measurements.

To stop my hands getting caught and injured. There are some important considerations around this, so please refer to my notes on spokeguards in Past and Current Supports.

[level-1]

## 11 To locomote

[breydon.id.au/locomote](http://breydon.id.au/locomote)

March 2021. Updated 12 October 2022.

Info on getting around with motor impairments.

You might also be interested in sports such as wheelchair football or in assistive technology for computing.

### 11.1 Advice

For anybody considering a wheelchair or other mobility device, the World Health Organization's Guidelines on the provision of manual wheelchairs in less resourced settings is full of vital information. Yes, even if you are in an amply resourced setting or dealing with different technology! Much in these Guidelines applies to everybody, yet is regularly overlooked. When you learn it for yourself, you can much more easily advocate for you and others.

The videos in the companion course, Wheelchair Service Training Package - Basic level (also from the W.H.O.) show the fundamental concepts in action. They feature real people with many different requirements, demonstrating a range of skills, in a variety of kinds of chair.



## 11.2 Lived experience

Speaking of diverse chair design—I am summarising some of my findings on different models in trials.

Elsewhere, you can examine tweaks to a specific machine: ART CHAI, a GRIT Freedom Chair Spartan lever-propelled wheelchair.

## 12 Wheelchair trials

[breydon.id.au/locomote/trials](http://breydon.id.au/locomote/trials)

Saturday 27 March 2021.

Updated 02 November 2022.

Beginning as a brief I supplied to dealers through my occupational therapist, and drawing on reams of observations from real-world trials, these pages offer a frank examination of a range of mobility equipment, from the perspective of an active and ambitious wheelchair user.

Or you might be looking for other things I'd be after.

[level-1] [level-1]0

### 12.1 To fit

I live in a fairly flat suburban environment, but do things in other settings too. Independent access to parks and nature is particularly important to me, especially for getting around town safely, as someone who suffers severe impacts from air pollution. Travel is predominantly by “walking” (wheeling), rail, bus, and—occasionally—airplane.

As well as wheelchairs, I am desperate to participate in wheelchair skating and dance.

Without appropriate assistive tech, I have been really struggling with absolute basics like getting to the bathroom.

My level of motor impairment varies from moderate clumsiness to complete paralysis, sometimes with spasms. The condition affects my entire body. I have four limbs, two hands and two feet, no limb difference, and am vaguely symmetrical in both anatomy and function. I am about 173 cm (5 8 ) tall. Floppy, ill-fitting chairs have caused me crippling joint pain and forward falls.

I have been most comfortable with wheelchair seats of 35 cm (14 ) in width. I struggle to grasp push rims accurately enough to propel myself over longer distances, although I find using them much easier than scooting with my feet. I cannot perform transfers safely by feel, but strongly prefer a tippy chair. I rely a lot on aural and visual feedback, and on consciously calculating positions/trajectories/flex/etc.

### 12.2 Seeking

While open to considering certain power chairs, I am foremost looking for efficient self-propulsion. My priorities are:

- maximum manoeuvrability in tight spaces
- easiest trekking outdoors

Achieving both to a satisfactory degree might take two separate chairs, or the use of interchanging components. Please refer to both links, for their respective requirements.

### 12.3 Tried

oof, well

It would be ridiculous to mention every wheelchair that I have ever given a go, but here are some of the most relevant examples.

I will give each trialled model a star rating indicative of overall appropriateness for me these days, between 0 ( ) and 5 ( ).

- Suitability for short-term use begins somewhere around 3 ( ) and 4 ( ).
- Suitability for ongoing use will lie nearer to 5 ( ).

Ratings are for a (hypothetical) brand new chair in the best available fit. Specifications given are for the actual chair I tried.

Two people looking contemplative among an assortment of scissor-fold wheelchairs and pressure cushions.

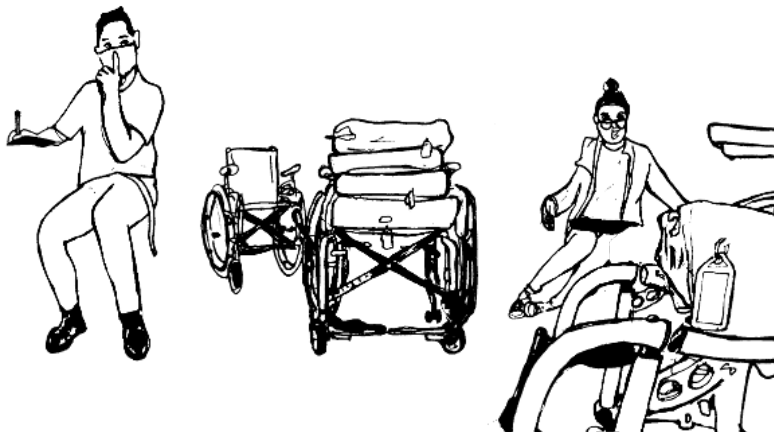


Figure 4: Comparing (left to right) the Karma Eagle, mystery Ottobock, and TiLite 2GX, March 2021.

1. Scissor-fold, transit, and/or hospital-style chairs This category is not appropriate for anything but very occasional use in very limited settings.
  - Karma Ergo Lite 2: Great for its (terrible) type.
  - Karma Eagle: Nope.
  - TiLite 2GX: Nope.

- Ottobock [unknown model: Avantgarde DV?]: Great for its (terrible) type.
2. Court sports chairs Not viable for either of the priorities I am trying to address. But some findings are relevant.
- There are about half a dozen individual court sports chairs I have played footy in, ranging from about a 30 cm to a 45 or 50 cm seat width, and over a similar diversity of geometry and construction.
- I find some court chairs to be almost too responsive, for someone who loses control of steering as easily as I do. That said, the right chair helps compensate for how very sluggish my poor grip and unpredictable weight-shifts make my sprints and defending, by enabling a flowing, opportunistic style of offence. My fundamental chair control will never consistently meet a 2 classification (or even most 1s!), but I enjoy riskier moves like rising up on one wheel or lunging for a ball close to the ground.
- Motivation Multisport: Favourite of its kind.
3. Nimble rigid chairs For which the main use cases are outlined in manoeuvrability and tight spaces.
- TiLite ZRA: Nope. But interesting seating.
  - Küsschall The KSL [Mark 1?]: Nearest match so far (for tight spaces).
  - RGK Octane Sub4: Uncomfortable for me at mo.
  - RGK Tiga FX: Immature engineering.
  - Melrose Scorpion: Silky and sturdy.
  - Melrose Hornet: Tough but tough.
  - Melrose Hawk Ultra: Not as supportive as a dual-tube.
4. Outdoorsy chairs For which the main use cases and candidate chairs are outlined in ease of trekking.
- GRIT Freedom Chair Spartan: Powerful, but wanting refinements.
5. Drive engagement: pedals, power assist, pushrings...
- MKS LAMBDA EzySuperior [platform pedal]: In concert with short cranks, revived my otherwise ruined pedalling ability.
  - BATEC MINI 2 [electric handcycle attachment]: Swift to attach, fussy to run.
  - Spinergy TC Max Handrim [pushring]: Frustratingly slim despite tactility.
  - MKS XC-III [platform pedal]: Smooth and dependable as footrests on an offroad wheelchair, but could use a quick-release for parking indoors.

6. Traction and float: skis, tyres, third wheels, forks...
  - CST Patrol [tyre]: Very capable, but dreadful to clean.
7. Wheelsets, castors, axles...
  - GRIT Sand/Snow Tires [wheelset]: Grass/Sleet perhaps, but unnecessarily undermined in all conditions by problematic choice of components.

## 12.4 Would like to try

I am still particularly interested in trying the likes of...

1. The nimble
  - RMA Sport SK8R
  - Ottobock Zenit R CLT
  - Kuschall The KSL or K-series
  - RGK MaxLite
  - Box WCMX
  - or similar

Plus, there was an aeroplane aisle chair designed to be taken as carry-on, which could do the trick in confined bathroomy spaces on land too... Hopefully I can track down the manufacturer details.

2. The outdoorsy
  - Leveraged Freedom Chair
  - Trekinetic GTE or K2
  - Mountain Trike MT Evo or eTrike
  - Ram Wheelchairs Overlander
  - GRIT Freedom Chair Pro
  - Top End Crossfire All Terrain Wheelchair
3. Brands trying for nimble and outdoorsy
  - Lasher Sport BT-X
  - Motivation various models
  - Mogo various models
4. Adaptive cycling In the absence of a lever drive, a handcycle attachment could avert some of the problems of pushrims, as well as those of electric-only power-assist machinery.
  - BATEC QUAD HYBRID
  - Stricker Neodrive range
  - Stricker Lipo Smart models

- manual-only handcycle attachments

Even-more severe difficulties also can be resolved with adaptive cycling technologies, such as

- the Nihola Flex 2.0
- and others

#### 5. Separate pieces to consider

- aftermarket lever drives: There have been a few companies offering similar products in recent years.
- third-wheel attachments: A third-wheel attachment would not allow as much ground clearance as is possible with an actual three-wheeled chair, but could still be very helpful!
- soft-surface runners: Winter runners that clip onto castors. (Potentially useful on sand as well?)
- electric power drives (for example Freedomtrax FT1)

[level-1]

## 13 Wheelchair manoeuvrability and tight spaces

breydon.id.au/locomote/trials/tight

Saturday 27 March 2021.

Updated Monday 07 February 2022.

Compare with ease of trekking.

[level-1] [level-1]0

### 13.1 Situation

Being nimble is critical for indoorsy domestic stuff, cramped workplaces, skating and dance.

It is especially crucial for moving about bathrooms, kitchens, and across thresholds. This helps to open up options for where one can safely and affordably live. It can be the difference between being able to visit people in their homes or not. It reduces stress and awkwardness when navigating the greengrocer's or tight passages between market stalls. It is essential to much work or leisure within venues that are crowded or spread across floor tiers, such as studios and theatres.

A personally appropriate degree of agility is also invaluable in wheelchair skating—which you might encounter under the confused term W.C.M.X—and some forms of dance.

### 13.2 Qualities

For such contexts, these qualities are the most important:

- compact chair-footprint in use

- precise, snug fit
- frame that maintains its shape under strain in any direction
- nimble handling
- very high predictability during transfers—this means keeping flimsy/sponginess to a comfortable minimum, and eliminating fiddliness

### 13.3 Features

These are the features to achieve them:

- external dimensions: short and narrow
- very little or no wheel camber
- strong wheels front and back, in appropriate sizes and materials
- a bit of controlled suspension—in the form of balloon tyres and/or actual systems
- a rigid frame, made to measure and carefully balanced
- tucked-in seating position
- seat back, bucket, etc that support/enforce good posture
- shaped pressure cushion(s)
- steady, symmetrical, fixed, one-piece footplate
- suitable places to attach belts or straps—waist, lap, torso being of particular consideration
- solid (or tension-adjustable) seat that will not sag over time
- robust and easily replaced sideguards
- side guards ending before the tops of the push wheels, leaving plenty of access to the tyres
- push rims designed for those with limited hand function (maybe in concert with glove/cuffs)
- unobtrusive mechanism for parking brakes

Here, I am assuming a chair with two large drive wheels controlled by push rims, plus one or two tiny castor wheels forward of the heels.

## 13.4 Candidates for manoeuvrability and tight spaces

Chairs definitely up to skating:

1. RMA SK8R Made to Measure
2. Box WCMX
3. RMA SK8R Club

Chairs which may or may not be durable enough:

4. Melrose Scorpion
5. Kuschall The KSL [Mk I or 2.0]
6. Ottobock Zenit R CLT
7. something like Mogo have
8. Lasher Sport BT-X
9. Motivation Active Rigid Frame
10. Melrose Hornet
11. RGK MaxLite
12. Kuschall K-Series
13. RGK Octane Sub4
14. Melrose Hawk Ultra
15. Ottobock Ventus

...And other predominantly welded, rigid, active chairs. [level-1]

## 14 Wheelchair ease of trekking

[breydon.id.au/locomote/trials/trekking](http://breydon.id.au/locomote/trials/trekking)

Saturday 27 March 2021.

Updated 12 October 2022.

You might prefer manoeuvrability and tight spaces.

[level-1] [level-1]0

### 14.1 Situation

Compared with the pokey indoors, there is a contrasting set of considerations for unpaved terrain, longer distances and hilly places.

Even in smooth, flat neighbourhoods, safe trekking is important, whether popping out for a stroll, commuting, or simply getting around a large site (for instance doing field-work, exploring a museum, or penetrating an immense shopping complex). Sure, think anywhere that heavy mobility scooters or fussy powerchairs might whizz without incident—but don't neglect a world beyond, in which those would be only more hindrance.

At a minimum, my ordinary routine is rounded out with gardening well off-piste, travelling through fields and forests, playing with my dog at the park or beach, going bushwalking, and dreaming of taking outdoorsy gigs. I don't want a mobility device to restore precious tastes of passions past. I am here to become more involved than before.

## 14.2 Qualities

Here, these qualities are the most important:

- stability and traction on uneven, slippery and soft ground
- minimal strain on shoulders
- high torque, low gear
- easy slowing and stopping
- cruisey jogging pace on the flat
- capacity to lug stuff
- opportunities to change seating position

## 14.3 Features

These are the ideal features:

- lever-drive system
- long wheelbase or wide wheel track
- three strong wheels, in appropriate big sizes and materials
- readily applicable braking system
- substantial ground-clearance
- possibly a little little bit of controlled suspension—flexy metal, balloon tyres, or actual systems—I'm not sure exactly yet; lacking diverse enough first-hand experience of this to be certain even for me
- excellent ventilation for strenuous use
- adequate space to bundle up in warm layers of clothing or blankets
- seat back, bucket, etc that support/enforce good posture
- suitable places to attach harnesses or supports—trunk and head being especially important in remote or risky environments
- multiple foot positions for switching stance
- thick pressure cushion(s)
- solid seat that will not sag over time



- robust or easily replaced sideguards
- wherever there is a choice, parts should not be adorned, wrapped, drenched, or coated in anything that will be sloughing off much (or harmfully) into the environment, even from a chair under extreme and persistent force...

While the last point is an important consideration with all products, this category involves drive chains, electrical systems, vast impact areas and exposure to the elements at an intensity completely alien to the typical day chair. Ensure that it will be possible to avoid lubricants containing petrochemicals or P.T.F.E., to keep batteries from leaking, to stop hand grips from perishing, to prevent glittery paint from ripping into cellular structures (by circumventing its production in the first place), and so on.

#### 14.4 Candidates for ease of trekking

Chairs incorporating levers:

1. Mountain Trike eTrike
2. Leveraged Freedom Chair
3. Mountain Trike MT Evo
4. Mountain Trike Mountain Trike
5. GRIT Freedom Chair Pro
6. GRIT Freedom Chair Spartan

Chairs lacking levers of their own:

7. Ram Overlander
8. Motivation Rough Terrain
9. Motivation Pioneer
10. Lasher Sport BT-X
11. Trekinetic GTE
12. RMA SK8R or similar plus a third wheel- or handcycle-attachment such as the Stricker Lomo 360
13. Freedomtrax FT2
14. Trekinetic K2
15. Box Beach Bomber / Trail Bomber

...And the occasional other. [level-1]

## 15 Aftermarket lever drives

[breydon.id.au/locomote/trials/lever](http://breydon.id.au/locomote/trials/lever)

Saturday 27 March 2021.

Updated 07 February 2022.

Compare with outdoorsy chairs for ease of trekking and nimble chairs for manoeuvrability and tight spaces.

### 15.1 Would like to try

There have been a few companies offering similar products in recent years, so there are sometimes other options. Here is one example:

- Langhøj NuDrive Air: A clip-on lever drive for 22 , 24 , or 25 wheels.

## 16 Third-wheel attachments

[breydon.id.au/locomote/trials/third](http://breydon.id.au/locomote/trials/third)

Saturday 27 March 2021.

Updated 07 February 2022.

A third-wheel attachment would not allow as much ground clearance as is possible with an actual three-wheeled chair, but could still be very helpful! Implementation of the same basic concept varies considerably.

Compare with adaptive cycling, and outdoorsy chairs for ease of trekking.

### 16.1 Would like to try

- Stricker Lomo 360: Stricker mainly make handcycles, most notably for touring. The Lomo 360 retains that seriousness of intent, without all the bulk and complexity of an actual handcycle. Generally, Stricker kit can be fitted with safety brakes, cargo baskets, and other features.
- FreeWheel FreeWheel: An alternate third-wheel attachment. Careless name (“freewheel” already having a meaning in the context of geared wheels, which is relevant to certain wheelchairs). Not as robust-looking as the Lomo 360, nor able to be fitted with accessories with which the Lomo 360 can.

## 17 Stricker trials

[breydon.id.au/locomote/trials/stricker](http://breydon.id.au/locomote/trials/stricker)

Saturday 27 March 2021.

Updated 07 February 2022.

Stricker mainly make handcycles, most notably for touring. Generally, Stricker kit can be fitted with safety brakes, cargo baskets, and other features.

Compare with other third-wheel attachments or outdoorsy chairs for ease of trekking.

### 17.1 Would like to try

- Stricker Lomo 360: The Lomo 360 retains the handbike tourer's seriousness of intent, without all the bulk and complexity of an actual handcycle.
- Stricker Handbike Tow Bar: For towing chair behind a bicycle.
- Stricker Wheelchair transporter: For towing stuff behind chair. 100 kg capacity! See also: Stuff-lugging in Past and Current Supports.

## 18 Soft-surface runners

[breydon.id.au/locomote/trials/runners](http://breydon.id.au/locomote/trials/runners)

Saturday 27 March 2021.

Updated 07 February 2022.

Compare with outdoorsy chairs for ease of trekking.

### 18.1 Would like to try

- Wheelblades Wheelblades S: Winter runners that clip onto castors. (Potentially useful on sand as well?)
- whatever the bigger ones are called (in the case of large-castored 3-wheelers)

...seem to be distributed by Ottobock Australia?

## 19 FreedomTrax trials

[breydon.id.au/locomote/trials/freedomtrax](http://breydon.id.au/locomote/trials/freedomtrax)

Sunday 20 February 2022.

Compare with (other) outdoorsy chairs for ease of trekking.

### 19.1 Would like to try

- Freedomtrax FT1: A pair of tank-style treads powered by a battery and controlled with a joystick, the FT1 is an aftermarket device that mounts, when needed, below a typical wheelchair. It is limited to an 8-mile (12 · 87 km) range and 5 km/h top speed. Daychairs with a wheeltrack of between 50 and 58 cm are accommodated... I think; the business uses the wrong terms on their (European) website. Manufacture is in Colorado, U.S.A. and headed by what sounds like a husband-and-wife team, who call the FT1 an “all terrain platform”. With the battery, said platform weighs 34 · 5 kg, its dimensions being 120 ( L ) × 60 ( W ) × 23 ( H ) in centimetres. While the range is insufficient for my usual patterns of travel and it denies the occupant a means of self-propulsion, riding on caterpillar treads is an interesting idea. It could be perfect for would-be powerchair-pilots who cannot afford full-time bulk.
- Freedomtrax FT2: the same platform with a rudimentary frame and seat built on.

## 20 L.F.C. trials

[breydon.id.au/locomote/trials/lfc](http://breydon.id.au/locomote/trials/lfc)

Saturday 27 March 2021.

Updated 03 August 2021.

The dream, really. Three wheels, long levers for propulsion, simple construction, globally prevalent bicycle parts, easy to repair. Resembles a billy-cart, but taller. Takes much less of a toll on the body than a standard wheelchair, and copes better with the real world.

An M.I.T. project, which went on to be rolled out through a few organisations in different parts of the world. Shame I can't weld.

Compare with other outdoorsy chairs for ease of trekking.

## 21 GRIT trials

[breydon.id.au/locomote/trials/grit](http://breydon.id.au/locomote/trials/grit)

Saturday 27 March 2021.

Updated 12 October 2022.

Global Research Innovation and Technology (GRIT) is the retuning of the dream to appeal to the U.S. outdoor recreation market; therefore, not quite as sensible. Still, probably the next best thing.

Note that setting up different gearing is still simply a case of obtaining common bicycle parts, swapping them in, and adjusting chain lengths.

GRIT chairs come with I.S.O. 559 mm wheels. In the bicycle world, this is understood as a type of 26 size; in the wheelchair world, 25 !

Compare with other outdoorsy chairs for ease of trekking.

A robust, three-wheeled wheelchair, featuring long propulsion levers on dual chain-drives.

### 21.1 Tried

(to date)

#### 1. Outdoorsy chairs

- GRIT Freedom Chair Spartan: Powerful, but wanting refinements.

### 21.2 Would like to try

- GRIT Freedom Chair Pro: Readily fit seats and harnesses that are more supportive than on the other versions. Lighter, stronger fork.

## 22 GRIT Freedom Chair Spartan

[breydon.id.au/locomote/trials/grit/spartan](http://breydon.id.au/locomote/trials/grit/spartan)

Wednesday 12 October 2022.

Updated 21 October 2022.

Lever-propelled, rear-wheel-drive chair.

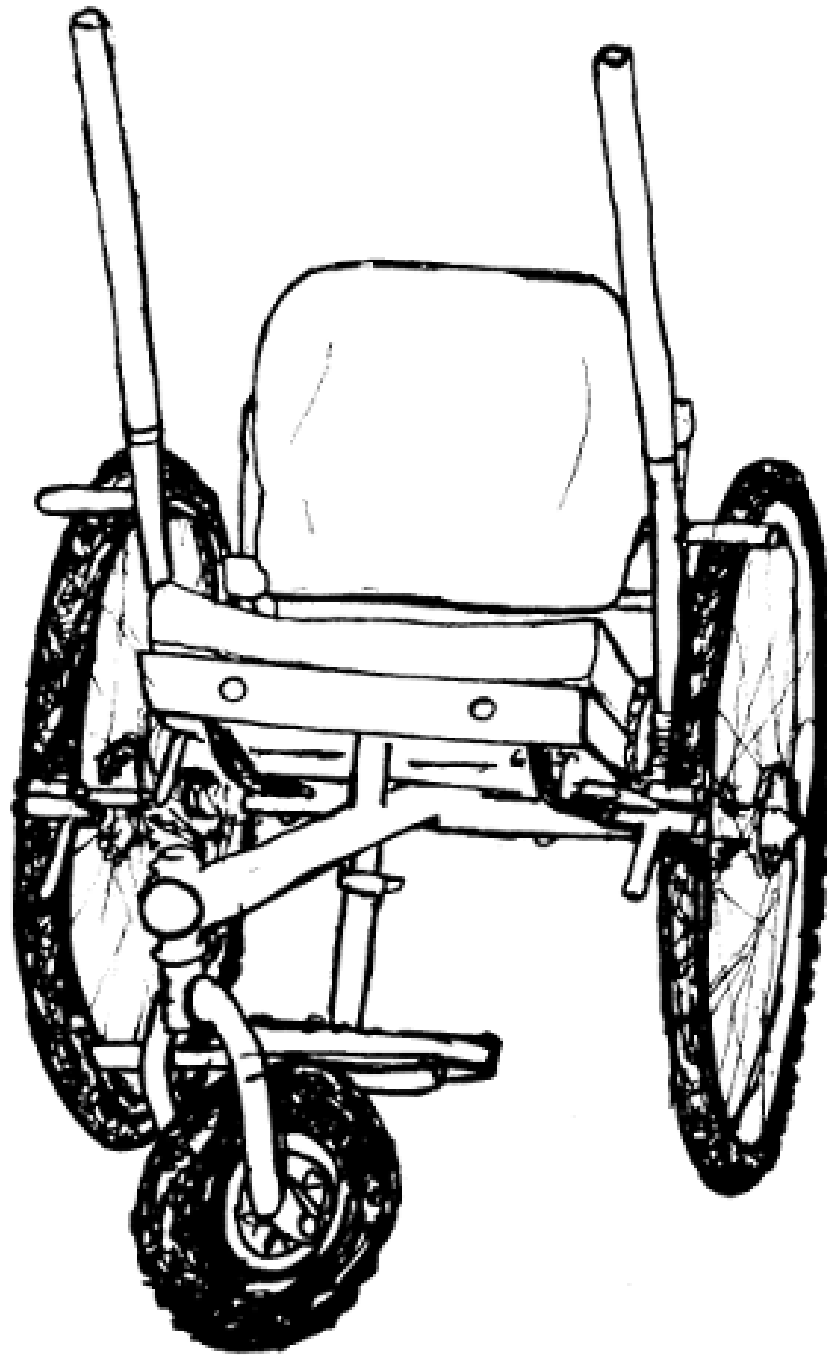


Figure 5: A GRIT Freedom Chair Pro fitted with two different drive-wheels, 2021.

## 22.1 Assessment

Powerful, but wanting refinements

During the interminable wait for a daychair, I turned to a GRIT Freedom Chair to reach select appointments around town. The Spartan variant boasts a reinforced frame, lateral handles at the back for an attendant to push, and an athletic gear ratio. The Spartan I've been using also sports what has proven to be an invaluable "utility clamp"—specifically, the version for towing the chair out of bogs and up slopes, which is also threaded to accept bicycle pedals for use as alternative footrests. So far, so brilliant.

Only on occasions can I hold myself up easily enough to safely sit in this chair. But, in our combined elements, the Spartan is very effective. It can be fun. The physical sensation of gentle manoeuvres evokes that of canoeing: an impression of buoyancy, intervals of paddling and attentive rest, the steering of a long and tapered craft. Confined, technical work crosses rafting with mountain biking; mounting logs and stalling on ledges to carry a watering can into nooks of a garden produces the imagined splendour of world-class exhibition. In the Spartan, I casually traverse grassed hillocks whom I couldn't dream of edging partway-onto in a conventional wheelchair. Pushing such a heavy mobility aid from behind can be strenuous, but the Spartan's high, well-made handles make the experience more "pram" or "lawn-mower" and a lot less "short-statured wheelie bin". All of which is to say that where this chair works well, outcomes are exceptionally satisfying.

Unfortunately, engineering attention apparently petered in and out following development of the leveraged drive (initially devised for the L.F.C.). There are many little, glaring problems with the GRIT line that surely could have been rectified at a prototype stage, which betray a distraction from much of the potential real-world application for this tool.

Pushing-friendly drive wheels should be standard (I elaborate on rims for rims) and, with so many metal parts moving in different directions under strong forces almost immediately seat-side, sideguards should be too.

Though GRIT do sell skirtguards (in plastic, at an enormous price), the seating is sadly representative of how the GRIT Freedom Chairs' worst aspects are not easily ameliorated at home. Especially crippling are the slick, haphazard nylon wall of a seatback on its jerky frame; the swivelling nature of the footplate's attachment (which even when so tightened that its quick release fails, still slews around at a wisp of exertion); and, most prohibitively, the Spartan's structural hostility around any kind of torso harness or safe head support.

GRIT chairs further surprise with an unpreparedness for luggage. However, some little pockets of opportunity are pleasing.

There is definitely a lot of literal room for improvement all over. The Freedom Chair's use of bicycle parts allows this to be a huge plus. Many different non-invasive changes are possible (some of which I will cover in more a detailed examination, ART CHAI). Perhaps even, I am hoping, some sort of seatback swap, to help hold my body safely and within more comfortable reach of the levers' arc.

Alas, for me personally, further inherent restrictions confine GRIT's Freedom Chair to stopgap status, ever a slightly sad, sporadic steed. Lever stowing and retrieval, an essential part of operating these chairs within tight spots, is difficult with upper body impairment. At cruiser speeds, maintaining direction

on cambered surfaces can be exhausting.

The (flicking?) mechanism for deployment on Mountain Trike’s self-propelled chairs would be far swifter and more achievable to operate. Mountain Trike course-correction sounds less taxing; the MT Evo variant of their steering and braking controls are probably adequately graspable for me. Mountain Trike also at least had the foresight to offer a readily fitting bag rack, and make far more thoughtful allowance for thoroughly supportive seating on all their models. GRIT’s Freedom Chair Pro might provide sufficient postural support in its own right, or allow for the easy installation of appropriate seating.

### 1. Chair tried

Table 1: GRIT Freedom Chair Spartan assessed in October 2022

Seat width	??? mm (16 )
Seat length	??? mm
Backrest height	??? mm
Footrest height	variable: ???-??? mm
Chair length	??? cm
Chair width	??? cm
Weight in use	??? kg
Frame material	Steel?
Footplate	Large grippy plate attached via quick-release bike-seat connector
Wheel camber	0°
Drive wheels (d.w.)	Two, towards rear
d.w. rims	aluminium
d.w. spokes	steel
d.w. hubs	32-hole, aluminium
d.w. axles	15 mm quick-release
d.w. tyres	57-559 (26×2 · 25 in bicycle terms / 25 in wheelchair), pneumatic
Push rims	none
Castors	One ??-??? at front all ??? mm (???×???) ??? rim/hub/?-spoke moulding pneumatic tyre
castor forks	tubular ???
Model number	???
Manufactured	circa February 2022

## 22.2 Further reading

- ‘???’ (Boston: GRIT). <https://www.gogrit.us/grit-freedom-chair-spartan-chair>, accessed March 2022.
- ‘ART CHAI’ (Narrm Melbourne). <https://breydon.id.au/locomote/artchai/>.

## 23 RMA trials

[breydon.id.au/locomote/trials/rma](https://breydon.id.au/locomote/trials/rma)

Saturday 27 March 2021.  
Updated 03 August 2021.  
Compare with other nimble chairs for manoeuvrability and tight spaces.

### 23.1 Would like to try

- RMA Sport SK8R Made to Measure: Skate and day chair. Robust frame. Suspension (castor) forks. Adjustable rear shock absorber, with option of dual shock absorbers.
- RMA Sport SK8R Club: Similar to the above—but adjustable, less well-fitted.
- RMA Sport Vida: Made-to-measure rigid day chair.

## 24 Trekinetic trials

[breydon.id.au/locomote/trials/trekinetic](http://breydon.id.au/locomote/trials/trekinetic)

Saturday 27 March 2021.  
Updated 03 August 2021.

Trekinetic make an offroadsy, front-wheel-drive chair. It comes in manual (rim-propelled) and power variants. Variable camber! (Between  $-16^\circ$  and  $0^\circ$ ). A shock absorber operates as a tilt-in-space mechanism.

Compare with other outdoorsy chairs for ease of trekking.

### 24.1 Would like to try

- Trekinetic K2: The manual one.
- Trekinetic GTE: The power one. Same kind of shape and size as the K2. Fitted with two 24V 120W motors.

## 25 Lasher Sport trials

[breydon.id.au/locomote/trials/lasher](http://breydon.id.au/locomote/trials/lasher)

Saturday 27 March 2021.  
Updated 03 August 2021.

Compare with other nimble chairs for manoeuvrability and tight spaces and outdoorsy chairs for ease of trekking.

### 25.1 Would like to try

- Lasher Sport BT-X: Modular rigid, made-to-measure, multipurpose chair. Castors, forks and drive wheels can all be swapped without using tools. There are a few choices of sets: for paved roads, for sand, etc. When not fitted to the chair frame, the alternative wheel set can be rigged up as a luggage trailer and towed behind the wheelchair.



## 26 Mountain Trike trials

breydon.id.au/locomote/trials/mountain

Saturday 27 March 2021.

Updated 03 August 2021.

Mountain Trike do an offroadsy, lever-driven chair. There are both powered and quad-friendlier variants! The layout does not take full advantage of the gear range which incorporating levers can offer, but trikes can be ordered with extended levers. Optional luggage rack. With a huge range of seating possibilities; these are likely to be the most supportive of the self-propelled outdoor-oriented wheelchairs.

Compare with other outdoorsy chairs for ease of trekking.

### 26.1 Would like to try

- Mountain Trike MT Evo: Adapted for limited hand function.
- Mountain Trike eTrike: Hybrid manual/electric version. One 36V 250W motor. Range of 8–20 mi (13–32 km).
- Mountain Trike Mountain Trike: Manual, self-propelled. Could be easily converted in the future to a dedicated attendant-driven (MT Push) or electric (eTrike) chair.

## 27 Motivation trials

breydon.id.au/locomote/trials/motivation

Saturday 27 March 2021.

Updated 03 August 2021.

Motivation's Multisport is fantastic. They prioritise all the right stuff.

### 27.1 Tried

(to date)

1. Court Sports Chairs
  - Motivation Multisport: Favourite of its kind.

### 27.2 Would like to try

Compare with other outdoorsy chairs for ease of trekking and nimble chairs for manoeuvrability and tight spaces.

- Motivation Rough Terrain: Very much like the L.F.C., but without lever propulsion. The Rough Terrain takes a very sensible rear tyre size of 37-590 (650A / 26×1 )
- Motivation Pioneer: A smaller, folding take on the Rough Terrain.
- Motivation Active Rigid Frame: A compact aluminium four-wheeler. Castors have quick release mechanisms too; not just the drive wheels.

### 27.3 Further reading

- Motivation Australia - A disability and development organisation (Aldinga: Motivation Australia, 2020). <https://www.motivation.org.au/>, accessed March 2021.
- Motivation: Freedom through mobility (Bristol: Motivation, 2018). <https://www.motivation.org.uk/>, accessed March 2021.
- ‘Sports wheelchair sales’ (Aldinga: Motivation Australia, 2020). <https://www.motivation.org.au/sports-wheelchair-sales/>, accessed March 2021.

## 28 Motivation Multisport

[breydon.id.au/locomote/trials/motivation/multisport](http://breydon.id.au/locomote/trials/motivation/multisport)

Saturday 27 March 2021.

Updated 03 August 2021.

Adjustable court sports chair.

A person doing a push-up, strapped into a basketball-/tennis-style chair.

### 28.1 Assessment

Favourite of its kind.

Of the few models I have tried, this is by far my favourite sports chair. I value the elegant pragmatism to the design.

I love the solidity of the side guards, and how dependable the (foot, shin, thigh, and pelvis) straps are (but they could be quicker to do up and undo).

If only such a wide chair weren’t so tricky to transport or get through doorways.

Motivation make some rigid day chairs, which sound great.

1. Chair tried

### 28.2 Further reading

- ‘Multisport wheelchair’ (Bristol: Motivation). <https://www.motivation.org.uk/multisport-wheelchair>, accessed March 2021.
- ‘Multisport wheelchair: AU\$995 + freight’ (Aldinga: Motivation Australia, 2020). [https://www.motivation.org.au/ma\\_sales/multisport-wheelchair/](https://www.motivation.org.au/ma_sales/multisport-wheelchair/), accessed March 2021.

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<sup>2</sup>I use the Motivation Multisport’s 500 mm footrest height, with ordinary tennis shoes on my feet and a simple 50-mm-thick foam cushion on the seat; however, my preferred stance on-court is different to that in a day chair.



Figure 6: The Motivation Multisport is a particularly athletic-feeling court sports chair, February 2021.

Table 2: Motivation Multisport assessed in March 2021

Seat width	350 mm (14 )
Seat length	variable: 350 mm, 400 mm (I have preferred the 350 mm length)
Backrest height	variable: 250 mm, 300 mm, 350 mm (I have mixed feelings about all three settings)
Footrest height	variable <sup>2</sup> : 450 mm, 475 mm, 500 mm
Chair length	89 cm
Chair width	88 cm
Weight in use	~ 14 kg
Frame material	?
Footplate	Metal loop in frame
Wheel camber	-15°
Drive wheels (d.w.)	Two, towards rear
d.w. rims	aluminium
d.w. spokes	steel
d.w. hubs	36-hole, aluminium
d.w. axles	12 mm quick-release
d.w. tyres	25-590 (650×25A or 26×1 ), pneumatic
Push rims	19 mm anodised aluminium, six-mount
Castors	Two at front, one at back, all 72 mm (3×? ) ??? rim/hub/?-spoke moulding rollberblade-style solid PU tyres
castor forks	solid aluminium
Model number	WM4SP-02M
Manufactured	circa 2019/2020

## 29 Ottobock trials

breydon.id.au/locomote/trials/ottobock

Saturday 27 March 2021.

Updated 03 August 2021.

Ottobock specialise in prosthetics and orthoses. Their folding chair was much stabler and shorter than TiLite's folding chair. The billion-euro holding company behind Ottobock concentrate on Ottobock and a single IT company, in stark contrast with some of the other big makers of rigid chairs (who appear to deal in the main with supplying miscellaneous equipment and surgical supplies to hospitals, or umpteen other industries). So things sound relatively promising, when it comes to Ottobock's rigid chairs.

### 29.1 Tried

(to date)

1. Scissor-fold, transit, and/or hospital-style chairs
  - Ottobock [unknown model: Avantgarde DV?]: Great for its (terrible) type.

### 29.2 Would like to try

Compare with other nimble chairs for manoeuverability and tight spaces.

- Ottobock Zenit R CLT
- Ottobock Ventus

## 30 Ottobock unknown folder

breydon.id.au/locomote/trials/ottobock/unknownfolder

Saturday 27 March 2021.

Updated 03 August 2021.

Collapsible (scissor fold), box-frame chair.

A scissor-fold wheelchair stacked high with pressure cushions.

### 30.1 Assessment

Great for its (terrible) type.

Not as bad as the TiLite 2GX, but no more appropriate than my old chair was new. Possibly slightly wider (push-rim to push-rim) than my Ergo Lite 2.

Ottobock do make fitted rigid chairs as well, which I would be interested in trying.

1. Chair tried



Figure 7: The mystery Ottobock offering some pressure relief, March 2021.

Table 3: Ottobock [unknown model: Avantgarde DV?] assessed in March 2021

Seat width	45 cm (16 )
Seat length	?
Chair length	93 cm
Chair width	~ 62 cm
Weight in use	~ 11 kg, maybe?
Frame material	Titanium
Footplates	Dual, folding, aluminium?
Wheel camber	~ -3°
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	?
d.w. hubs	?-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	?
Castors	Two, ?×? , towards front ??? rim/hub/?-spoke softroll-style ??? solid tyres
Model number	?
Manufactured	?

## 30.2 Further reading

- Ottobock, ‘Active in daily life’. <https://www.ottobock.com.au/wheelchairs-and-seating/active-sports-and-outdoor/active-in-daily-life/>, accessed March 2021.

## 31 Küschall trials

breydon.id.au/locomote/trials/kueschall

Saturday 27 March 2021.

Updated 03 August 2021.

Küschall seem to put thought into their engineering, and were started by an actual wheelchair user. Apparently, they pioneered mono-tube chairs in the 1980s.

Somewhere along the line, U.S. hospital equipment monster Invacare slurped up the company as a premium make—but it’s unclear (as this industry tends to be) whether that was globally or regionally or what.

As of early-mid 2021, the current version of these models is [Model Name] 2.0, with both this and the former generation advertised for sale as [Model Name].

Compare with other nimble chairs for manoeuvrability and tight spaces.

### 31.1 Tried

(to date)

1. Nimble rigid chairs

- Kuschall The KSL [Mark 1?]: Nearest match so far (for tight spaces).

### 31.2 Would like to try

- Kuschall The KSL: Very lightweight. Made-to-measure rigid. Great variety of drive-wheel, castor and upholstery choices. Wonderfully small. I have tried what seemed to be the earlier version of The KSL. But it would pay to confirm and/or retrieval before making a decision regarding either iteration!
- Kuschall K-Series: Modular rigid: seat module is independent of the frame. Among the cooler chairs aesthetically. (Particularly the earlier generation).
- Kuschall Champion SK: Like most collapsible wheelchairs, the seat kind of concertinas awkwardly. However, the folding mechanism is based around a sturdy-looking hinge. With the SK option, the chair reduces to a much more compact shape. If I wanted a concertina chair, this would be my first suggestion to try. RGK's FX approach sounded less of a compromise on fit and efficiency; however, the Kuschall Champion SK could well lock in place better!

### 31.3 Further reading

- Kuschall. <https://kuschall.com/>, accessed March 2021.

## 32 Kuschall KSL

breydon.id.au/locomote/trials/kueschall/ksl

Wednesday 21 April 2021.

Updated 03 August 2021.

Welded, monotube chair.

An ultralight monotube wheelchair bearing a thick cushion and huge rubbery pushrims.

### 32.1 Assessment

Nearest match so far (for tight spaces).

Getting warmer! I was wonderfully surprised how short (front-to-back) this mystery chair was (until finding out the make and model).

At 380 mm, the seat width starts to become steerable for me (though 360 mm or less would be better). This demonstrator still got stuck at narrower doors. Lose the camber, go for a 340 mm or 360 mm wide seat, choose smallest skate wheels—and it would slide through effortlessly both backwards and forwards, hold me more comfortably and be much less hassle in tricky spaces at difficult times! Would be safer for dance and skating, that way, too.

This particular chair propped me a couple of centimetres too high up off the ground, at which height the centre of gravity (~ 110 mm?) was slightly



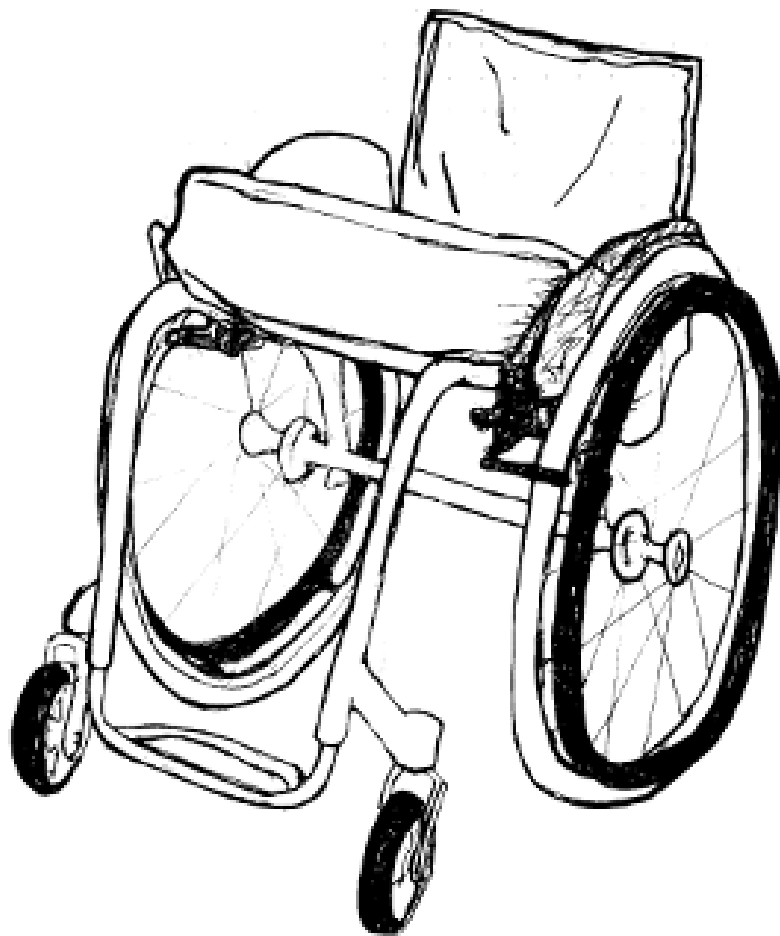


Figure 8: The KSL exudes minimalism, even while offering plenty of relevant options—such as these wonderfully chunky pushrims, April 2021.

too far back for going up slopes safely. Easy fix: would need only spec it a bit lower, and maybe use an anti-tipper on very wonky occasions. (Keeping in mind that carrying stuff—water bottle, daypack...—relatively low and forward on the frame will affect centre of gravity, too.)

Seat-back was tension-adjustable at half a dozen or so levels. Salesperson meddled with the tensioners without my consent while I was stuck sitting in the compromised chair; he very quickly made it impossible for me to hold myself up or hold myself still or to move anywhere but into a fall. Yikes. (“Yikes” what a jerk and “yikes” how vulnerable this type of seat-back makes one to mistakes.)

Two big concerns: fragile carbon-fibre side-guards... Could we weld on some sturdy ones instead? Or order a frame with bolt-holes but no guards (carbon-fibre being a tricky material to recycle, so v wasteful if surplus to needs), then pop on some wooden plates; or even just fashion something out of waxed canvas?

And is the chair as a whole robust enough to go skating regularly?

Note that the second generation KSL (The KSL 2.0) and the first may differ in important respects! In particular, the front of the 2.0 looks as though it might be easier to orient hands around during difficult transfers. It could be illuminating to compare them side-by-side.

#### 1. Chair tried

Table 4: Kuschall The KSL [Mark 1?] assessed in April 2021

Seat width	380 mm (15 )
Seat length	~ 40 cm (~ 16 )
Backrest height	?
Footrest height	?
Hanger angle	90°
Chair length	~ 73 cm
Chair width	~ 60 cm
Weight in use	~ 6 · 5 kg
Frame material	?
Footplate	Fixed
Wheel camber	−3°
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	?
d.w. hubs	??-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	thick and rubber-coated
Castors	Two, 5×? , towards front
	??? rim/hub/?-spoke
	??? tyres
Model number	?
Manufactured	?

## 32.2 Further reading

- Kuschall, ‘The KSL’. <https://kuschall.com/international-en/products/the-ksl/>, accessed March 2021.

## 33 R.G.K. trials

[breydon.id.au/locomote/trials/rgk](http://breydon.id.au/locomote/trials/rgk)

Saturday 27 March 2021.

Updated 03 August 2021.

RGK seem into biomechanics. All of their chairs are rigid(-style) and made-to-measure. This seems to bode very well.

The business is in some way affiliated with U.S. mob Sunrise Medical (who produce Quickie chairs), which I would not say does, so much.

In practice, the Octane Sub4 and Tiga FX weren’t my cup of tea. These are essentially variants of the same model that constitutes much of RGK’s range. (The Tigas are made of aluminium; the Octanes titanium; the FXes fold; the Sub4s are modified to be lighter. They are otherwise identical.)

Compare with other nimble chairs for manoeuverability and tight spaces.

### 33.1 Tried

(to date)

1. Nimble rigid chairs
  - RGK Octane Sub4: Uncomfortable for me at mo.
  - RGK Tiga FX: Immature engineering.

### 33.2 Would like to try

- RGK MaxLite: Might be slightly more suitable for my needs than the Tiga/Octane chairs—for sitting comfortably, if not so much usage-wise. Seems to have metal sideguards!

### 33.3 Further reading

- RGK, <https://rgkwheelchairs.com/>, accessed March 2021.

## 34 R.G.K. Octane Sub4

[breydon.id.au/locomote/trials/rgk/octsub4](http://breydon.id.au/locomote/trials/rgk/octsub4)

Wednesday 21 April 2021.

Updated 26 June 2021.

Welded, monotube chair.

[level-1] [level-1]0

## 34.1 Assessment

Uncomfortable for me at mo.

I have tried two Octane Sub4s: one with random, wrong axles and one with appropriate axles.

1. RGK Octane Sub4 frame with random, wrong axles Wednesday 21 April 2021, Boonwurrung Country.

This hardly counts towards a trial at all. The wrong size axles had been jammed in, rendering the drive wheels nearly unusable. (Star rating assumes correct axles)! The salesperson had not even wanted me to see the chair up close, so I got very little time touching it.

Despite this garbage experience: promising kind of chair. The light weight would make a super difference if trying to one-limbedly (or -headedly) manoeuvre the chair closer from bed or the ground, for instance!

As with The KSL, the fragile carbon-fibre side-guards are a worry and a nuisance, and I am concerned as to whether the chair as a whole is robust enough to go skating regularly. It looks like some RGK chairs do come with welded metal side-guards. Robustness-wise, the aluminium-framed models may be less capable? Some RGK models are of a dual-tube design; but not necessarily stronger than the others for it. More insight needed.

Anyway, I would like to try an Octane Sub4 for real! It would be helpful to compare with the Tiga Sub4, if possible; I have not had an opportunity to assess the difference aluminium versus titanium construction makes to manoeuvring, predictability, comfort, or safety. I would also still like to compare a Sub4 to an FX.

2. RGK Octane Sub4 frame with appropriate axles Saturday 26 June 2021, Boonwurrung Country.

I tried an Octane Sub4 for real!

This one had a folding backrest, but was still pleasantly light. It was so nice to nudge into position before getting in and for popping the wheels on.

Something still feels slightly “off” to me about the Octane/Tiga frames—the give in the side guards, the fat (though unfortunately hooking-prone) castor legs, and the nonchalant engagement of the hubs contribute to a lovely plush experience all round, whereas I had hoped for forms easier to place with precision. It reminded me of the difference between a padded leather sneaker and a simple canvas one. I wonder if given time to adjust I would grow to greatly appreciate RGK’s loosey-goosey sensation as forgiving and trustworthy, rather than find it gloomy and detached.

However, I could not get comfortable during the trial. After feeling unmoored in this chair and the Tiga FX, I was very worn out and sore, from how tense I’d been! My preference remains a chair that hugs the body more steadily.

3. Chairs tried
-

Table 5: RGK Octane Sub4 assessed in April 2021

Seat width	400 mm (16 )
Seat length	?
Backrest height	?
Footrest height	?
Hanger angle	90°
Chair length	?
Chair width	62 cm
Weight in use	~ 6 · 5 kg
Frame material	Titanium
Footplate	Fixed
Wheel camber	I genuinely could not tell because the wheels would not sit still!
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	?
d.w. hubs	~ 18-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	?
Castors	Two, 4×? , towards front ??? rim/hub/?-spoke ??? tyres
Model number	?
Manufactured	?

Table 6: RGK Octane Sub4 assessed in June 2021

Seat width	460 mm (18 )
Seat length	?
Backrest height	?
Footrest height	?
Hanger angle	90°
Chair length	?
Chair width	?? cm
Weight in use	~ 7 kg
Frame material	Titanium
Footplate	Fixed
Wheel camber	?
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	?
d.w. hubs	~ 16-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	standard, narrow
Castors	Two, 5×? , towards front ??? rim/hub/?-spoke ??? tyres
Model number	?
Manufactured	?

## 34.2 Further reading

- RGK, ‘Octane Sub4’. <https://rgkwheelchairs.com/wheelchairs/daily-wheelchairs/octane-sub4.html>, accessed March 2021.

[level-1]

## 35 R.G.K. Tiga FX

[breydon.id.au/locomote/trials/rgk/tigafx](http://breydon.id.au/locomote/trials/rgk/tigafx)

Saturday 26 June 2021.

Welded, monotube chair, with joints at backrest and front hanger allowing a Z-shaped fold.

### 35.1 Assessment

Immature engineering.

Rigid-like, but folds pretty flat, with the front of the frame tucked up and the backrest down. Imagine lashing something like this to an outdoorsy chair or modest cargo bike, to swap into at the end of a cross-country trip. Or, much as RGK’s advertising emphasises, the peace of mind when flying (or on long-distance rail).

I tried this chair a tiny bit, indoors, but neglected to closely examine or try operating the folding mechanism! Rolling around and reaching for things on a

kitchen bench, I found that the fold-joints proved to have many times more play (despite being done up), than I had expected. With changes in inertia, those on the front hanger would lurch between two extremes maybe five degrees apart. Those on the seatback felt unpredictable (which, to be fair, was exacerbated by the backrest being too reclined for me). The side-guards jostled around. Sure, this was a demo model—but the disappointing performance cannot be excused on the basis of hard, longterm use, because (business-class frequent fliers aside, perhaps) an active traveller’s chair needs to withstand weird and numerous strains. This is miles below any of the standards that most of the folding bicycle industry manages, so on the bright side there is enormous potential for future generations of this concept.

This, the Tiga FX is aluminium; Octane FX is the same chair in titanium. Extra flex in the tubing itself is a slightly daunting thought, but then it would pay to insulate iffy hinges from undue shocks.

### 1. Chair tried

Table 7: RGK Tiga FX assessed in June 2021

Seat width	~ 380 mm (~ 15 )
Seat length	~ 460 mm (~ 18 )
Backrest height	?
Backrest angle	91°
Footrest height	?
Hanger angle	~ 90°
Chair length	?
Chair width	~ 58 cm
Weight in use	?
Frame material	Aluminium
Footplate	Fixed
Wheel camber	?
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	?
d.w. hubs	~ 16-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	standard, narrow
Castors	Two, 5×? , towards front
	??? rim/hub/?-spoke
	??? tyres
Model number	?
Manufactured	?

## 35.2 Further reading

- RGK, ‘Tiga FX’. <https://rgkwheelchairs.com/wheelchairs/daily-wheelchairs/tiga-fx.html>, accessed March 2021.

## 36 Box trials

breydon.id.au/locomote/trials/box

Saturday 27 March 2021.

Updated 03 August 2021.

Boofy chairs with a good reputation and bit of a cult following.

Compare with other nimble chairs for manoeuvrability and tight spaces and outdoorsy chairs for ease of trekking.

### 36.1 Would like to try

- Box Wheelchairs WCMX: Like the RMA SK8R Made to Measure, but uglier.
- Box Wheelchairs Beach Bomber / Box Wheelchairs Trail Bomber: Unfortunately four-wheeled, but maybe worth a look anyway.

## 37 Melrose trials

breydon.id.au/locomote/trials/melrose

Saturday 27 March 2021.

Updated 03 August 2021.

Big range of rigid day chairs and sports chairs. I believe I have been in some of their airport and basketball chairs, but not ones of the right size. They tend towards thick / lots of tubing, as I recall?

Compare with other nimble chairs for manoeuvrability and tight spaces.

### 37.1 Tried

(to date)

1. Nimble rigid chairs
  - Melrose Scorpion: Silky and sturdy.
  - Melrose Hornet: Tough but tough.
  - Melrose Hawk Ultra: Not as supportive as a dual-tube.

### 37.2 Further reading

- ‘MKCC’ (Papanui: Melrose Kiwi Concept Chairs). <https://melrosewheelchairs.co.nz/>, accessed March 2021.
- ‘Melrose Wheelchairs | Adaptive Concepts Australia’ (Oakleigh: Melrose Wheelchair). <https://www.melrosewheelchairs.com.au/>, accessed March 2021.

## 38 Melrose Scorpion

breydon.id.au/locomote/trials/melrose/scorpion

Tuesday 03 August 2021.

Welded, dual-tube chair.



## 38.1 Assessment

Silky and sturdy.

1. Chair tried

Table 8: Melrose Scorpion assessed in July 2021

Seat width	~ 400 mm (~ 16 )
Seat length	~ 380 mm (~ 15 )
Backrest height	?
Backrest angle	~ 90°
Footrest height	?
Hanger angle	~ 90°
Chair length	?
Chair width	?
Weight in use	~ 3 · 9 kg plus wheels
Frame material	Titanium
Footplate	Fixed
Wheel camber	?
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	synthetic
d.w. hubs	~ 16-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	Pair A: standard narrow anodised Pair B: textured narrow steel
Castors	Two, 4×? , towards front ??? rim/hub/?-spoke ??? tyres
Model number	?
Manufactured	?

## 38.2 Further reading

- ‘Scorpion’ (Papanui: Melrose Kiwi Concept Chairs, 2020). <https://melrosewheelchairs.co.nz/wheelchairs/scorpion.html>, accessed March 2021.

## 39 Melrose Hornet

breydon.id.au/locomote/trials/melrose/hornet

Tuesday 03 August 2021.

Welded, dual-tube chair.

### 39.1 Assessment

Tough but tough.

1. Chair tried

Table 9: Melrose Hornet assessed in July 2021

Seat width	~ 400 mm (~ 16 )
Seat length	~ 380 mm (~ 15 )
Backrest height	?
Backrest angle	~ 90°
Footrest height	?
Hanger angle	~ 90°
Chair length	?
Chair width	?
Weight in use	?
Frame material	Aluminium or titanium?
Footplate	Fixed
Wheel camber	?
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	synthetic
d.w. hubs	~ 16-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	Pair A: standard narrow anodised Pair B: textured narrow steel
Castors	Two, 4×? , towards front ??? rim/hub/?-spoke ??? tyres
Model number	?
Manufactured	?

## 39.2 Further reading

- ‘Hornet’ (Papanui: Melrose Kiwi Concept Chairs, 2020). <https://melrosewheelchairs.co.nz/wheelchairs/hornet.html>, accessed March 2021.

## 40 Melrose Hawk Ultra

breydon.id.au/locomote/trials/melrose/hawku

Tuesday 03 August 2021.

Welded, monotube chair.

Not to be confused with the highly adjustable Melrose Hawk!

A person shuffling awkwardly in an ultralight monotube wheelchair.

### 40.1 Assessment

Not as supportive as a dual-tube.

1. Chair tried

Table 10: Melrose Hawk Ultra assessed in July 2021

Seat width	~ 400 mm (~ 16 )
Seat length	~ 380 mm (~ 15 )
Backrest height	?
Backrest angle	~ 90°
Footrest height	?
Hanger angle	~ 90°
Chair length	?
Chair width	?
Weight in use	?
Frame material	Titanium
Footplate	Fixed
Wheel camber	?
Drive wheels (d.w.)	Two, towards rear
d.w. rims	?
d.w. spokes	synthetic
d.w. hubs	~ 16-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	Pair A: standard narrow anodised Pair B: textured narrow steel
Castors	Two, 4×? , towards front ??? rim/hub/?-spoke ??? tyres
Model number	?
Manufactured	?



Figure 9: It's a very good chair, but my legs can't quite relax in this Hawk Ultra, July 2021.

## 40.2 Further reading

- ‘Hawk Ultra’ (Papanui: Melrose Kiwi Concept Chairs, 2020). [https://melrosewheelchairs.co.nz/wheelchairs/hawk\\_ultra.html](https://melrosewheelchairs.co.nz/wheelchairs/hawk_ultra.html), accessed March 2021.

## 41 Ram Wheelchairs trials

[breydon.id.au/locomote/trials/ram](http://breydon.id.au/locomote/trials/ram)

Saturday 27 March 2021.

Updated 12 December 2021.

Ram Wheelchairs are based out of Boorloo Perth.

Compare with other outdoorsy chairs for ease of trekking.

### 41.1 Would like to try

- Ram Wheelchairs Overlander: Looks like a beefier Rough Terrain. 30cm balloon castor! Multiple size options for drive wheels. Choice of chrome moly or titanium frame. Welded side guard options.

## 42 Mogo trials

[breydon.id.au/locomote/trials/mogo](http://breydon.id.au/locomote/trials/mogo)

Saturday 27 March 2021.

Updated 03 August 2021.

Mogo sell an interesting bunch of custom day, sports, and wilderness chairs, from a range of manufacturers. Some are apparently made in-house.

Compare with other nimble chairs for manoeuvrability and tight spaces and outdoorsy chairs for ease of trekking.

## 43 Top End trials

[breydon.id.au/locomote/trials/topend](http://breydon.id.au/locomote/trials/topend)

Saturday 27 March 2021.

Updated 03 August 2021.

Compare with other outdoorsy chairs for ease of trekking.

### 43.1 Would like to try

- Top End Crossfire All Terrain Wheelchair: Looks just the product to stoke and exploit a horrid blend of internalised ablism and toxic masculinity. Four wheels... Flimsily rotating footplate held in place by brute bolting... The design ethos embodies a detached, violent attitude to landscape unlikely to be very efficient or effective at negotiating most kinds of it—any surprise this is pitched at hobbyist hunters, fishers (fish-hunters), and those who desire to “conquer... terrain”?

At least the Lasher, though also four-wheeled, offers some specialisation. Seems a stretch to suppose that a Crossfire All Terrain could be of real value over a BT-X, Overlander, Rough Terrain or Pioneer, K2, Mountain Trike, or Freedom Chair. Anyway, please, prove me wrong.

## 44 Karma trials

[breydon.id.au/locomote/trials/karma](http://breydon.id.au/locomote/trials/karma)

Saturday 27 March 2021.

Updated 03 August 2021.

As a brand, Karma prioritise attendants' convenience over active wheelchair users', so I do not expect their couple of rigid-frame active chairs to be brilliant examples of that genre.

### 44.1 Tried

(to date)

1. Scissor-fold, transit, and/or hospital-style chairs
  - Karma Ergo Lite 2: Great for its (terrible) type.
  - Karma Eagle: Nope.

## 45 Karma Ergo Lite 2

[breydon.id.au/locomote/trials/karma/ergolite2](http://breydon.id.au/locomote/trials/karma/ergolite2)

Saturday 27 March 2021.

Updated 03 August 2021.

Collapsible (scissor fold), box-frame chair.

### 45.1 Assessment

Great for its (terrible) type.

Purchased new from a rehabilitation shop. The people on staff encouraged me to buy the chair in a much bigger size than I needed.

My first chair of my own, and still relied upon as of March 2021. Although it has been a life-saver, I cannot get around in it anymore and it was not really appropriate to begin with.

It has had a turn at everything from holding me up while I wait for the microwave to finish, to solo international travel with great strings of transit connections. I have used it to board and disembark a variety of buses and metros and suburban trains and intercity trains and international trains and big airliners; and stowed it in cars (with the chair in collapsed form) and vans. This chair has taken me through snow, into mud, in grass, among cobblestones, on skateparks, up and down steps, along smooth streets in fine weather in some of the flatter urban neighbourhoods of cities like Melbourne, Sydney, London, and Paris... even across carpeted rooms and through polished halls. The Ergo Lite 2 is honestly—at this point—one of the best chairs I have ever used, but it

was suited to none of these things. Incredibly labourious. In motion, it would feel like my body's frame and the chair's were in a continual clash.

People pushing it have found it very tiring, too. Places like downtown Newcastle (New South Wales) or villages in the Dandenongs proved absolutely beyond it, but so does just about anywhere. The Ergo Lite 2 did, however, in its heyday, make pretty nice lounge seating.

### 1. Chair tried

Table 11: Karma Ergo Lite 2 assessed in March 2021

Seat width	45 cm (18 )
Seat length	40 cm (16 )
Chair length	93 cm
Chair width	62 cm
Weight in use	11 kg
Frame material	Aluminium
Footplates	Dual, folding, plastic
Wheel camber	$\sim 0^\circ$
Drive wheels (d.w.)	Two, towards rear
d.w. rims	aluminium
d.w. spokes	steel
d.w. hubs	28-hole
d.w. axles	fixed
d.w. tyres	37-456 (20×1 ), non-inflatable
Push rims	Karma Ergo, plastic
Castors	Two, ?×? , towards front plastic rim/hub/?-spoke moulding hospital-style grey plastic solid tyres
Model number	KM2512
Manufactured	September 2014

## 45.2 Further reading

- Karma Medical, 'Ergo Lite 2'. <https://www.karmamedical.com/product/km-2512/>, accessed March 2021.

## 46 Karma Eagle

[breydon.id.au/locomote/trials/karma/eagle](http://breydon.id.au/locomote/trials/karma/eagle)

Saturday 27 March 2021.

Updated 03 August 2021.

Collapsible (scissor fold), box-frame chair.

### 46.1 Assessment

Nope.

Emergency hire to get in and out of toilet. Poorly balanced. Blousy castors. Came with non-standard footplates fitted (presumably for people with much less

leg than me), which forced my knees ridiculously high, increasing this chair's precariousness and causing excruciating pressure.

### 1. Chair tried

Table 12: Karma Eagle assessed in February 2021

Seat width	35 cm (14 )
Seat length	40 cm (16 )
Chair length	94 cm
Chair width	56 cm
Weight in use	15 · 3 kg
Frame material	?
Footplates	Dual, folding, plastic
Wheel camber	> 0° (positive camber; further inward at bottom than top!)
Drive wheels (d.w.)	Two, towards rear
d.w. rims	aluminium
d.w. spokes	steel
d.w. hubs	32-hole
d.w. axles	quick-release
d.w. tyres	37-540 (24×1 ), nylon pneumatic
Push rims	Karma Ergo, plastic
Castors	Two, 6×1 , towards front plastic rim/hub/5-spoke moulding hospital-style grey plastic solid tyres
Model number	KM8020 (Karma 8000 Series)
Manufactured	November 2019

## 47 TiLite trials

[breydon.id.au/locomote/trials/tilite](http://breydon.id.au/locomote/trials/tilite)  
Sunday 26 December 2021.

### 47.1 Tried

(to date)

1. Scissor-fold, transit, and/or hospital-style chairs
  - TiLite 2GX: Nope.
2. Nimble rigid chairs
  - TiLite ZRA: Nope. But interesting seating.



## 47.2 Further reading

- Permobil, ‘TiLite TR’. <https://www.permobil.com/en-au/products/manual-wheelchairs/tilite-tr>, accessed March 2021.
- Permobil, ‘TiLite ZR’. <https://www.permobil.com/en-au/products/manual-wheelchairs/tilite-zr>, accessed March 2021.
- Permobil, ‘Manual wheelchairs: Tailored performance’ comparison matrix.

## 48 TiLite 2GX

breydon.id.au/locomote/trials/tilite/2gx

Saturday 27 March 2021.

Updated 03 August 2021.

Collapsible (scissor fold), box-frame chair.

### 48.1 Assessment

Nope.

Less appropriate than my old chair!! Probably even bigger, too; harder to fit inside bathroom and through doors.

TiLite do make two models of fitted rigid chair: the 1 dual-tube TiLite TR and the 1 · 25 monotube TiLite ZR. This clumsily-engineered lump has put me off trying them.

1. Chair tried

Table 13: TiLite 2GX assessed in March 2021

Seat width	40 cm (16 )
Seat length	~ 45 cm (~ 18 )
Chair length	93 cm
Chair width	23 claims spec sheet (58 · 5 cm), but was wider
Weight in use	~ 10 kg
Frame material	Titanium
Footplates	Dual, folding, aluminium?
Wheel camber	~ -3°
Drive wheels (d.w.)	Two, towards rear, Spinergy brand
d.w. rims	?
d.w. spokes	?
d.w. hubs	12-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	?
Castors	Two, ?×? , towards front ??? rim/hub/?-spoke softroll-style ??? solid tyres
Model number	?
Manufactured	?

## 48.2 Further reading

- Permobil, ‘TiLite 2GX’. <https://www.permobil.com/en-au/products/manual-wheelchairs/tilite-2gx>, accessed March 2021.

## 49 TiLite ZRA

breydon.id.au/locomote/trials/tilite/zra

Wednesday 21 April 2021.

Updated 03 August 2021.

Heavily adjustable, monotube chair.

### 49.1 Assessment

Nope. But interesting seating.

Not really a model I would call nimble; quite asside from the bulk of this demonstrator (thrust on me in place of a 14 -or-so RGK FX!!?). This hypothetical star-rating is particularly generous, based largely on the potential for a more supportive seat and the much improved footplate, compared with the folding Ottobock’s.

The ZRA I tried was fitted with a carbon-fibre, rigid seatback. The specific placement and so on did not suit me. I would like to properly explore rigid seating (for installation on an appropriate chair!).

1. Chair tried

Table 14: TiLite ZRA assessed in April 2021

Seat width	45 cm (18 )
Seat length	~ 48 cm (~ 19 )
Backrest height	?
Footrest height	?
Chair length	~ 90 cm
Chair width	~ 71 cm
Weight in use	~ 9 kg
Frame material	Titanium
Footplate	Fixed
Wheel camber	-2°
Drive wheels (d.w.)	Two, towards rear, Spinergy brand
d.w. rims	?
d.w. spokes	?
d.w. hubs	12-hole
d.w. axles	quick-release
d.w. tyres	~ 25-540 (24×1 ), pneumatic
Push rims	“natural grip”?
Castors	Two, 5×? , towards front ??? rim/hub/?-spoke ??? tyres
Model number	?
Manufactured	?

## 49.2 Further reading

- Permobil, ‘TiLite ZRA’. <https://www.permobil.com/en-au/products/manual-wheelchairs/tilite-zra>, accessed March 2021.

## 50 ART CHAI

breydon.id.au/locomote/artchai

Tuesday 11 October 2022.

Updated 01 November 2022.

ART CHAI is a GRIT Freedom Chair Spartan, lever-propelled wheelchair.

See also: GRIT trials.

[level-1] [level-1]0

### 50.1 The blend

Being a somewhat unfinished implemetation of an excellent concept, the GRIT Freedom Chair can be much improved. ART CHAI began as a shipment of a 16-inch Spartan, a rope mount utility clamp, and one (extra) set of torque couplings. Some changes of note follow.

1. Decals The Spartan especially comes donning an excess of vinyl stickers. I removed them. In stages. (Hence “ART CHAI”). (It was, for a period, more of a “(F)REED CHAI ART SPAN”).

The logos on the push handles were prominent at their great height, and the Spartan branding on the wheelchair itself was intensive. The lettering on the boom could soon become ratty from sliding the utility clamp to different positions. The lot was unwelcome plastic and marketing.

A square of orange plastic printed with the GRIT logo, sitting on a generic seatbelt.

The edges of the GRIT badge are misshapen and beginning to disintegrate from several weeks spent jammed inside the seatbelt mechanism. A tenacious coat of adhesive remains congealed across the button itself.

2. Utility clamp May bear towing hitch, carry-basket, and fitted footrests.

GRIT’s rope mount option included a marvellous carabiner to rattle against the frame all day. This is much better occupied with clipping stuff to my quiet daypack than to the chairfront, usually. As well as all still being at the ready in case an emergency strikes, the main hitch fixture serves as a helpful handhold for tugging the hulk through doorways at the close of a journey.

Meanwhile, there is still space to secure a storage compartment to the stubby upright tube at the top of the utility clamp, and one’s choice of comfortable, durable bicycle pedal (to serve as footrests) either side. I got started with an oxygen-bottle-holder, and poached a pair of unusually supportive quick-release pedals from my dormant folding bicycle. These



Figure 10: Even gumming up of the seat buckle turned out to be the result of yet another sticker, masquerading as a custom-made button. Boonwurrung Country, April 2022.

were pretty fantastic, although a larger capacity basket may be more versatile.

Later, I changed to a pair of screwed-in pedals that extend further sideways, which has allowed me to support my daypack (just loose on the boom) between my knees without too much strain. However, without a quick-release mechanism, wide pedals make tucking the chair away under tables more fraught.

Two differently shaped, large metal platform pedals, mounted to the utility clamp.

The clamp is pushed up against the castor wheel headset, at the front of the chair's boom arm.

From there, a beartrap-style pedal balloons out to the left. Its outer cage forms a wide oval.

On the right is an unusually long pedal shaped somewhat like a butterfly—with the butterfly's "head" being a quick release connection to the clamp. Instead of pins or serrations to grip the sole of one's shoe, the wings are dotted with small rings, resembling the suckers on an octopus's tentacle.

The GRIT towing fixture is bolted into the top of the clamp, between the two pedals. A backpack rests a little further back on the boom, and a tube of Ecogrease lies on the grass below.

3. Lights For the first six months I had solar-powered bicycle lights mounted where I could least impracticably cram them: a white light protruding from the aforementioned bottle-holder at the front, and a red light astride one push handle. Due to a charging failure, I removed the red; and to reduce teetering clutter at the front of the chair, also the white.
4. Footplate Mucks up ground clearance but most often needn't come along.
5. Toolkit For fixes on the go, a pump, spanners, spoke key, and others best do<sup>3</sup>.

I carry these in a bicycle saddlebag, usually hung off the backrest, where it won't slew about or get in the way.

The saddle bag, snug in a nook at the back of the chair.

A flap has been unzipped to reveal tools and a transit ticket stored within.

On some fiddlier expeditions, I clip the saddlebag to the boom or a bottle cage near my feet, to keep its contents in reach.

The contents of the toolkit, plus one enormous screwdriver, leaning on a rolled up tarpaulin in the seat pan.

The tools include a little electric air compressor and its fittings, a few different small screw-turning implements, a spoke key, and a 13 mm spanner—all of them dwarfed by that massive, automotive-industry-scale screwdriver.



Figure 11: Swapping from the M.K.S. LAMBDA EzySuperior (right) to the M.K.S. XC-III (left). Boonwurrung Country, October 2022.



Figure 12: Toolkit stowed unobtrusively between the push handle arms. Boonwurrung Country, October 2022.



Figure 13: Typical contents of the ART CHAI toolkit. Boonwurrung Country, October 2022.

The size of screwdriver for adjusting the GRIT’s chain tensions is giant<sup>4</sup>. It takes separate accommodation in a larger bag. This screwdriver could perhaps be tied beneath the seat, instead, but I’d worry about losing such an obscure tool.

The huge screwdriver wedged neatly between the chair’s large, central tube and the underside of the seatpan.

6. Provisions Underseat balast in gigantic bottle cages, sometimes trimmed with a cargo net.
7. Safety straps Lapbelt reanchored for lap itself; aftermarket, a thick strap for torso.

Changing anchor points.

One side of the belt about to be moved from its original location near the back of the seat pan; the other side of the belt newly repositioned next to the chain ring.

8. Seating Tarp as improvised wedge.

Considering textiles bag as seat cushion. Would hardly be more uncomfortable than the off-gassing lump of square “meh” is when combined with the... well:

<sup>3</sup>...come along

<sup>4</sup>Well, Phillips size 3—which folks don’t seem to make in stubby or slim handles.



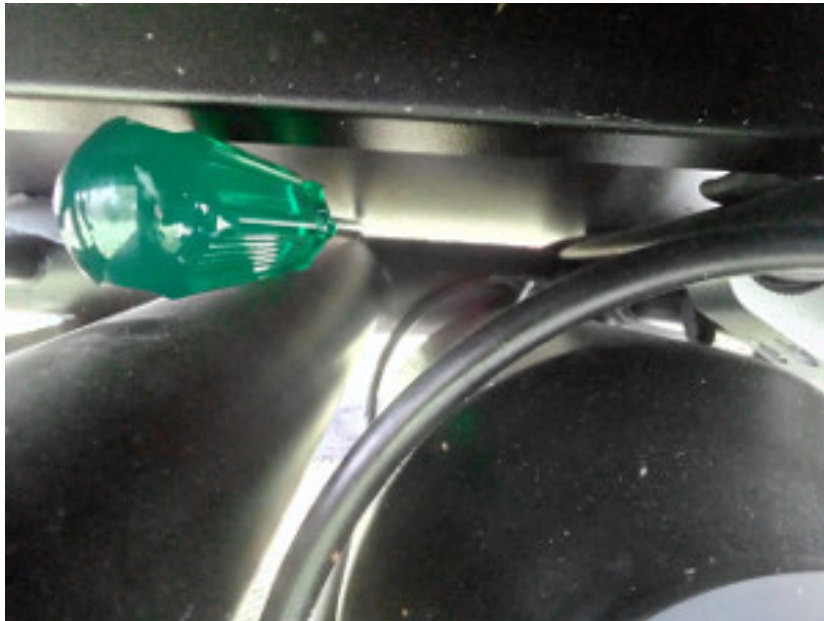


Figure 14: One prospective home for a chain-tensioning screwdriver. Boonwurrung Country, October 2022.



Figure 15: Moving the provided seatbelt to the furthest forward of GRIT's various predrilled anchor points. Boonwurrung Country, April 2022.

The seatback still needs to be a whole lot less horrid, too.  
Stiff skirtguards are necessary. Woodworking would work.

9. Drive wheels Requiring pushrings and other improvements. How! Rims for rims.
10. Steering Pegs would be good, but I certainly can't afford GRIT's version.

[level-1]

## 51 ART CHAI rims for rims

breydon.id.au/locomote/artchai/rimsrims

Tuesday 11 October 2022.

Updated 02 November 2022.

Replacing the drive wheels on GRIT's Freedom Chair family of leveraged wheelchairs.

[level-1] [level-1]0

### 51.1 *Rim* rims or rim-rims?

Typically, a drive wheel for a manual wheelchair has two different components that are known as rims. To plan a wheel, it is vital we distinguish them—hence referring to the loop of handrail as a “pushring”, and to the structural frame as the “wheel rim”.

### 51.2 What for? Or: Alright, but rims for rims for what?

In many situations, an aftermarket wheelset is needed on the GRIT Freedom Chair to improve performance, safety, and practicality.

I am working with an early 2020s Spartan model, which is fitted with GRIT's Sand/Snow Tires option as standard. The stock wheels on the 3.0 and Pro models are very similar; although their tyres are narrower, and the Pro can be ordered with lurid colouring to its polymer spokes.

The drive wheels that GRIT supplied for the Freedom Chair Spartan are of a 32-spoke structure, with 57-559 C.S.T. Patrol tyres, and nearly entirely in black finishes. I suppose possibly this could be adequate for certain recreational settings, but there are substantial downsides to GRIT's selection.

1. Manoeuverability The chair's lever drive excels at forward locomotion. It cannot function in reverse. This has more implications than might immediately appear obvious. Every slight nudge forward on either lever is a serious commitment.

There also seems a profound risk, especially on upward slopes, of an engaged lever crushing the fingers, limbs, snouts, or little bodies of lapriders or inquisitive companions, against the wheel with horrifying force.

Thankfully, with moderate faff, the levers can be engaged or stowed from moment to moment, allowing the wheels to rotate freely backwards in settings that call for this flexibility (should the operator(s) have pre-empted it). Yet there are no pushrings on the stock wheels, and the

tread is difficult and uncomfortable to grasp. Not only self-propulsion, but self-minutest-adjustment is severely impeded.

As a result, manoeuvrability is unnecessarily terrible indoors, in tight outdoor spots, going through gates and doors, when commingling with dense foot traffic, among tame animals or kidlets, travelling on public transport, and while waiting to cross roads.

Most pushrings are shaped to connect with the wheel rim at six evenly distributed points. For the stresses on the wheel to sustain this symmetry, the number of attachment points functions best as a factor of the number of spokes. 36-spoke wheels, then, would make so much more sense than the 32- GRIT chose.

2. Worth of girth Each wheel's axle and quick-release button project well beyond the tyre span—by about 45 mm.

Barely taking advantage of these nine enormous centimetres of additional width becomes extra frustrating at gates and other narrow pathways. Here, the button clips stuff seemingly way out. It often even becomes caught or depressed. A pushring or a wider tyre would better shield the axle from a greater range of angles, and diminish the surprise at the clearance required to skirt on safely by.

3. Grubbiness trouble It is slow, hard work to clean the tread on the C.S.T. Patrol tyres after they meet gardens, parks, or wet streets.
4. Conspicuity The ultra macho colour scheme makes for an unfriendly appearance and poor visibility.
5. Falls risk The chair is prone to tipping backwards or sideways on some crucial inclines.

Anti-tip devices would ruin vital ground clearance.

Taller drive wheels at the back push the front wheel into soft surfaces with that bit more force, as well as raising the centre of gravity and lengthening the overall craft; but, the skew they create can buy precious degrees' grace. That doesn't directly help with the sideways factor, directly intensifying it—although a gentle-textured, wide tyre can be braced against to more sophisticated effect when shifting upper-body weight around, subtle though we're getting. To me, sideways tilt has been most confronting on rare occasions where a second person is pushing from behind. Whereas in everyday life, I find myself doing a lot of ledge-climbing, for which popping wheelies from given slopes is essential. Of course, the front wheel can be changed as well or instead, to compensate.

Managing falls risk well is all an intricate trade-off, informed by very personal requirements.

6. Range Despite being the chunkiest GRIT offers, even these drive wheel tyres are not sufficiently wide/soft/low-pressure for much beach or desert access, nor for some other desirable terrain.
7. Improving the above The last point could be addressed with wheels in the environs of 100-507 ERTRO. Everything else is resolvable with any of a variety of sizes. Please see the following sections for specifics.

### 51.3 Quirks of construction

Before beginning, there are some things to be aware of.

Great care will need to be taken in drilling the wheel rims to accept the pushrings. For unpredictable arms like mine, pushrings are to be nearly flush with the wheel, so that fingers don't get caught and damaged.

Both wheels may be built without dishing the rims off-centre, unless the choice of tyre is too wide to otherwise clear the lever-drive.

The torque couplings get bolted to the disc brake mounts.

The wheels attach to the chair using the wheelchair axles and torque couplings.

One wheel will be mounted "backwards" (from a bicycling perspective), so directional tread is to be oriented accordingly.

### 51.4 Parts to coördinate

This project entails designing a pair of practically identical wheels, with each wheel consisting of the following:

1. Torque coupling Including bolts for it.  
GRIT sell sets of these on request.
2. Hub As for a bicycle front wheel. And:
  - I.S.O. six-bolt disc brake mount
  - 36-hole forged aluminium spoking flanges
  - 100 mm\* O.L.D.
  - to take 15 mm through-axleHub, rims, and such need be nothing fancy, and best their materials' normal, silvery colours.
3. Axle A wheelchair axle, not a bicycle one. Can reuse original pair if need.
  - 15 mm diameter
  - quick-release mechanism (or not, I suppose?)
  - distance from thread to securing balls is around 135 mm\*
4. Wheel rim
  - 36-hole aluminium
  - drilled (precisely!) to accommodate push ring
  - of dimensions to suit tyre and push ring
5. Spokes and nipples
  - stainless steel spokes with brass nipples
  - wouldn't hurt to go for something strong, that can be hauled on in the event of a fall

- dimensions determined by the shapes and sizes of wheel rim, hub, and tyre, as well as the pattern according to which the spokes will be laced
6. Rim tape
    - I prefer rubber, although other types work
    - dimensions to fit wheel rim
  7. Tyre Sized according to combo of push ring and wheel rim.
 

If possible, I choose lighter colours of urban bicycle tyres.

For a “fat bike tyre”, though, the priority is just something with widely-spaced knobs, to make cleaning easy—though a reflective stripe will be a nice bonus.
  8. Inner tube
    - to fit tyre
    - my personal preference is for Presta valve, but Schrader okay too (and Schrader is generally more advisable!)
  9. Pushring My preferred pushrings would be the likes of:
    - thick-tubed bare steel (an inch or more thick)
    - Spinergy TC Max Handrim
    - Spinergy TC Stainless Steel Handrim
    - CarboLife Curve L
    - CarboLife QUADRO
  10. Hardware to securely attach push ring to wheel rim Um, look let’s discuss wheel sizing...

## 51.5 Sizing

Parts here are described according to the size of tyre that they are designed to fit (or be), and expressed in I.S.O. sizing (also known as an ERTRO size). Note that the vernacular and commercial designations tend to use other, mutually conflicting systems.

Remember that the bead seat diameter referenced in the ERTRO sizes is **not** what ultimately determines the fit between a wheel rim and a pushring—because that’s not where they connect. Nor does the size in the other tyre-oriented systems of shorthand. Wheel rims come in various shapes. On some wider wheel rims, pushrings can mount at a range of positions relative to the spokes.

If in doubt—and one should be—consult products’ actual physical form, or use unambiguous measurements according to a ruler.

Choice of sizes will be determined by availability of pushrings or possibly, to a lesser extent, adventurousness of technician.

Possibilities may include:

- **635** pushring on a **40ish-635** wheel—if pushrings built to fit 635 size are on market or affordably makeable.

- **622** pushing on a **40ish-635** wheel—*might* be possible with careful choice of screws and spacers?
- **622** pushing on a **50ish-622** wheel
- **590** pushing on a **50ish-622** wheel—again, *might* be possible, if sketchier?
- **590** pushing on a **37-590** wheel—though chair would be no less tippy than with stock wheels

Or if really desperate, the 57-559 CST Patrol tyres and their tubes could be reused for:

- **559** pushing on a **57-559** wheel

Last but not least appealing are:

- **smaller diameter** pushings on a **very fat-tyred** wheel—as long as dish to clear lever-drives, and keep tyre-width around 10 cm (give or take a couple)

As with all wheelchair parts, it is also important to consider what sizes and systems are readily available in the regions and circumstances in which the chair is to be used! In this respect, it is hard to go wrong with a 37-590 wheel. But I would prefer either around 100-507 or the 40-635. We'll see, hey?

## 51.6 Appendix: Tyre sizes, in order of my preference for immediate-term usage (October 2022)

1. **100-507 or wider, on very wide rims to maximise volume** (youth fatbike sizes): Tyre and rim choice is likely to be very limited, but otherwise this strikes me as ideal for the time being. I may need to trim knobs if tread is cluttered. I don't know if 36-hole rims are available in this size range?
2. **40-635**: Worth looking into extra durable 12-tab sports chair pushings designed for 700C [xx-622] wheels, bending tabs and substituting longer screws with spacers as necessary. The match is not as critical as on a day or court chair, and the ease of replacing other parts on the road / in remote areas / overseas would probably more than compensate.
3. **37-590**: Even easier to get parts for (particularly pushings), although at my absolute lower limits on tyre width and seat elevation, for this chair.
4. **Adult fatbike sizes [primarily 559]**: Super interesting possibility, with a wide variety of options for rims/tyres/pushings. Extra care would need to be taken around some of the larger tyre volumes possible; parking brakes could need abandoning or creative changes to articulation, and overall wheel width could substantially curtail the levers' arc. However, a big boost to rear elevation would bring immediate, massive improvements in the supportiveness of GRIT's way-too-reclined seatback, so I am super enthused to explore this approach whether now or as a secondary wheelset in the longer term.

5. **50-622 or smidges wider:** Not amazing as poss for travel (in terms of sourcing spare parts, from either wheelchair or bicycle worlds), but a size ripe for cargo/city tyres with great visibility and load-bearing. Note also that even in the absence of pushrings, a comfortable-enough tread on a tyre even of this much width could still represent quite an improvement for short bursts of low-speed hand-wheeling.

## 51.7 Appendix: Ordering parts

I'm still asking and scrounging around for other manufacturers' data, but this is a start.

1. Pushring dimensions Tab of tabs!

Table 15: Tab distances and part numbers. Source: CarboLife Katalog 2022 Englisch.

Tab distance	Curve L	Quadro
465 mm	22LL665E31	22QL665GT1
512 mm	24LL615E31	24QL615GT1
523 mm	24LL623E31	24QL623GT1
535 mm	25LL635E31	25QL635GT1
565 mm	26LL665E31	26QL665GT1
576 mm	26LL676E21	26QL676GT1

2. Pushring manufacturer headquarters CarboLife technologies GmbH & Co. KG  
Hermann-Mende-Straße 5-7  
01099 Dresden  
Germany  
Email: [info@carbolife.de](mailto:info@carbolife.de)  
Phone: +49 351 501 937 30  
Fax: +49 351 797 907 5  
Web: [carbolife.de](http://carbolife.de)  
  
Spinergy, Inc.  
1709 La Costa Meadows Dr  
San Marcos, CA 92078  
United States of America  
Phone: +1 (877) 291-4540 (Toll Free) or +1 (760) 496-2121  
Web: [spinergy.com](http://spinergy.com)  
As for distributors? These products are sold on the Australian market...

[level-1]

## 52 Been reading

[breydon.id.au/reading](http://breydon.id.au/reading)

Thursday 11 August 2022.

Updated 05 March 2023.

Informal lit-talk dating from late 2021, on.  
[level-1] [level-1]0

## Advisory

Some potentially distressing content (within the notes below) is preceded with a hash symbol and quick statement as to its nature. So too is the occasional spoiler. But far from everything of concern is marked in this way.

## Background to this document

The public face of *been reading* is automatically generated from a file that I use to keep track of library loans and which quotes or notes I have posted on social media.

The books among these are for my BookWorm profiles wrul@bookworm.social (pre-2023), which is no longer even loosely in synch; and wrul@book.snailhuddle.org (subsequent reads).

Some of the borrowed items were assigned to me, rather being than of my particular choosing.

Neither reference nor quotation, and not even ranking, equate to endorsement.

## Ratings, roughly

“F”s seemed almost pure harm and were poorly written. “E”s were slogs and wastes. “D”s I would have refused publication pending thorough rounds of re-drafts, reframing, and/or reresearch. “C”s read neither fantastically nor awfully, or they did both just enough that it cancelled out—unless they delighted but I barely began, so couldn’t reliably say. “B”s held something, substantial, of distinct interest or especial enjoyment, which might richly reward a deliberate revisiting. “A”s may not ring perfect to me, but I would gift or receive with unhesitating gladness.

These designations were derived from an old podcast prioritisation scheme of mine, which asked:

How keen was I on this?

- A** top priority
- B** fairly worthwhile
- C** almost missable
- D** only bother if extremely convenient
- E** garbage
- F** don’t dare

The two systems don’t completely align. I often forget which one I’m using, and how they relate—so don’t trust small differences in grade to be meaningful! Especially when it comes to magazines and novels, these rankings are haphazard.  
[level-1]



## 53 Internet housekeeping

breydon.id.au/meta

First published April 2020.

Updated 12 December 2022.

breydon.id.au is a gopher hole, gemini capsule, and website turning into other things.

### 53.1 Agenda

Let's discuss some of the considerations around access(ibility), and visitors' privacy and security. For those interested, I loosely document the distinctive methods that form the place.

## 54 Protocols, formats, and accessibility

breydon.id.au/meta/access

First published April 2020.

Updated 12 December 2022.

related to typing computers better.

[level-1] [level-1]0

### 54.1 Formats

Increasingly, material at this domain is available across multiple formats, including plain text, spoken word, and hypermedia.

For example, [breydon.id.au/meta/access](http://breydon.id.au/meta/access) is the home of this present document, and enough for you to receive a copy of its full text. But if you want, you can load a specific format. Putting `/index.html` at the end of that address leads to a webpage; whereas `/index.txt` leads to a text-only version. There is also a pamphlet, using `/index.pdf`; an Org-mode file under `/index.org`; as well as gemtext, with `/index.gmi`.

Some sections of [breydon.id.au](http://breydon.id.au) will have a “spoken aloud” link, in case you would like to have a real person to talk you through things.

As well as individual passages (pages or tracks), you can download a whole lot at once from the collection BREYDON's all.

### 54.2 Protocols

All of these are available over your choice of Gopher, Gemini or the World Wide Web (W.W.W.).

### 54.3 Accessibility

The methods used to produce and supply BREYDON's documents aim for a comparable representation of the core text and any illustrative devices, regardless of the medium.

Although I do keep users of screen-reader software in mind while I'm tapping away in the source code, I have not done any subsequent testing of how the material renders in sound or in braille. I recognise that I might need to

substantially adjust my practices! If there are any shortcomings for you, please let me know about them.

Likewise, if the audio recordings could be better matched to your needs, I would love to hear what to improve.

Finally, while I do play around a little bit with presentation for graphical display, I consider doing so more of an indulgence. If the results don't work so comfortably on your device, I'm sorry. Maybe shoot me a screenshot, so that I can see what's gone awry? If it's a webpage having the problem, for the meanwhile you can try turning off my style sheets, in your browser. [level-1]

## 55 Privacy and security

[breydon.id.au/meta/privacy](http://breydon.id.au/meta/privacy)

First published April 2020.

Updated 03 March 2022.

May be considered in conjunction with methods and access(ibility).

[level-1] [level-1]0

### 55.1 Stance

I am absolutely not interested in tracking you, nor in tricking you. I would rather others not track or trick folks, either.

Note that I will keep vague, minimal access logs in the very very very short term, purely for diagnosing failures (if I even notice them).

As my stuff runs on hired server space, unfortunately, I can't truly determine how the equipment's operators behave with regards to your info. And then there is all the other infrastructure in between us!

There is not a great deal that I can do alone, as a lowly hobby-dabbler, to minimise the risks inherent in how the internet itself is constructed. But I would like to do as much as I've (or 'develop) the skills for. Moreover, there is hope and immense power in collective effort.

### 55.2 Scripts, cookies, embedded trickery and third-party webmuck

The "Adaminaby" or Marginalian Capital Territory webpages (from Noted Festival's Pulpture exhibition) incorporate home-made pieces of ECMAScript, for switching which sections are displayed. This kind of thing:

```
function displayCondishosoOfPartishies() {
    var CondishosOfPartishies = document.getElementById('condishosofpartishies');
    var CondishoLede = document.getElementById('condisholede');
    if (CondishosOfPartishies.style.display === 'none'){
        CondishosOfPartishies.style.display = 'block';
        CondishoLede.style.display = 'none';
    }
    // and so on
}
// and so forth
```

Figure 16: Extract from Pulpture code

These have been left in, for archival interest. The pages were written to turn out legibly in browsers that ignore scripting — so no pressure to enable it!

Caution, though: the Pulpture videos are still hosted elsewhere, by Vimeo, with Vimeo’s interface embedded on some pages of the Pulpture-subsite, through iframes. Ah, whoops.

Otherwise, I have weeded out cookie-dropperly and scripts in general, as well as stuff hosted from beyond the Breyds. You might still want to block such things anyway. Even if you trust me, it is not going to be me who takes advantage of any sneaky stuff that does slip through. There is, for instance, no reason for me to send you a H.T.M.L. email (whether directly or via a newsletter company) or call on a showy font kept by some big data mob. [level-1]

## 56 Internet housekeeping methods

[breydon.id.au/meta/methods](http://breydon.id.au/meta/methods)

First published April 2020.

Updated 08 March 2022.

How it works...

[methods of writing internet](#)

[methods of captioning internet](#)

[methods of serving internet](#)

## 57 Methods of writing internet

[breydon.id.au/meta/methods/writing](http://breydon.id.au/meta/methods/writing)

First published April 2020.

Updated 08 December 2022.

[level-1] [level-1]0

### 57.1 Background

For a couple of decades, I cast the raggedy knits of Hypertext Markup Language (H.T.M.L.) and Cascading Style Sheets (C.S.S.) that strung my web-pages. Typing directly in H.T.M.L. is still, I reckon, the best way to make a small website—especially for the novice!

So why do it any differently? In my case, a few things have changed:

1. Living pages grew much more numerous.
2. The use of my fingers has diminished.
3. I am no longer all that interested in the web.

### 57.2 Software

Now most of what I write for the internet goes into one continuous lump. This file is easily arranged using a format called “Org”. I bung in some annotations (for special details such as links, dates, or captions), and then use Org mode (in

the text-editing software Emacs) to generate a variety of documents for each section.

As of February 2022, new and revised pages around here are produced with:

- Carsten Dominik’s Org version 9 · 5
- Justin Abrahms’ ox-gemini.el version 0, for gemini hypertext
- Jonathan Kew & Khaled Hosny’s XeLaTeX; and other packages in T<sub>E</sub>X Live 2021, for print-oriented formats
- LilyPond 2 · 18 · 2, for music notation
- some ad hoc hacks of my own making

Though it would be lovely to breeze along on sophisticated, automated processing of everything, I just manually export specific passages as needed. `:EXPORT_FILE_NAME:` paths ensure correct placement within the directory structure and can be used to label draft runs.

```
* Pronouns & titles      :about:pronouns:
:PROPERTIES:
:custom_id: pronouns
:EXPORT_FILE_NAME: breydon.id.au/DRAFT_about/pronouns/index
:header-args:text: :tangle breydon.id.au/about/pronouns/gophertag :noweb-ref pronouns-goph
:EXPORT_TITLE: BREYDON’s pronouns
:EXPORT_OPTIONS: toc:nil
:EXPORT_DATE: 08 November 2020
# and so on
:END:
```

Figure 17: Defining partial exports using Org subtree properties. December 2021.

Before going online, I also export the source file as one whole unit (afresh), and introduce the newly generated updates to my other material for publication.

```
rsync --exclude 'DRAFT*' --update --recursive --verbose ~/breydon.id.au/breydon.id.au ~/pu
```

Figure 18: Blending Org-derived documents with everything else public. February 2022.

The revised sections then sit in `~/public/breydon.id.au/` waiting to be copied to the server. Along with the updated documents, this folder holds unchanged, earlier exports and things like audio and hand-coded files. [level-1]

## 58 Methods of captioning internet

breydon.id.au/meta/methods/captioning

First published April 2020.

Updated 03 March 2022.

My approaches to captioning on BREYDON’s reflect particular accessibility priorities, while being heavily influenced by my use of Org for writing.

[level-1] [level-1]0

## 58.1 Placement

To ensure no-one misses out on them, image descriptions and credits stay out of the (often heavily obscured) metadata and instead feature in the main flow of t' text. In most media the descriptions are formatted as quotes—contributors to the conversation.

Where practicable, the picture itself follows as a captioned figure. The figure caption can serve as an index listing.

It took some fiddling to find a compromise that would suffice across many media, while keeping the single, shared source file succinct. This is where I've settled for now:

```
#+begin_quote
[[filepath][A one-line description of the image.]]
Role: Person. Thing copyright who, used under what licence.

Any subsequent detail for the image description.
#+end_quote

#+name: fig:unique_identifier
#+caption: Event or subject. Location, month year.
[[filepath]]
```

Figure 19: Template for invoking visuals via Org. December 2021.

This same approach can be applied to music notation, rubrics, and other means of visual representation, regardless of whether an actual image file is involved or not.

## 58.2 Dynamic subtitles

We can go beyond the wall of text, of course.

Synchronised captions for speech and other sounds are possible if the audio is presented like a film clip.

Once the audio is mastered, a written copy of the text goes into a subtitle file, where I gradually break the piece down into time-stamped chunks. For a basic monologue, the simplistic SubRip format is adequate. Working in the absence of dedicated subtitling software, Web Video Text Tracks (WebVTT) are even easier to edit.

Next, the sounds and the subtitles are packaged together. Some might prefer if helpful imagery chaperones the subtitles, despite video files incurring bigger demands. But to conserve space and energy, it should be possible to distribute all the subtitle tracks that anyone could want in a humble Matroska audio container.

Alternatively, app-aspirant H.T.M.L. tags can combine the audio with WebVTT on a webpage, like so:

```
<figure id="videoContainer" data-fullscreen="false">
  <video id="video" controls preload="metadata" poster="whatever.jpg">
    <source src="whatever.ogg" type="video/ogg">
  <p>
```

```

    Even if the audio will not play on this page, you can still
    <a href="whatever.mka">download a captioned recording</a>.
  </p>
  <track label="English" kind="captions" srclang="en" src="whatever-en.vtt" default>
</video>
<figcaption>A close-captioned recording of whatever.</figcaption>
</figure>

```

Figure 20: Bringing audio and subtitles together through a webpage. January 2022.

### 58.3 Multilingualism

For publishers with adequate resources, captioned readings could easily extend to subtitles in translation and footage of signing interpreters! [level-1]

## 59 Methods of serving internet

breydon.id.au/meta/methods/serving

First published April 2020.

Updated 03 March 2022.

Presently, I pay businesspeople to let me use a teeny skerrick of a server bank. The hosting has been in transition from a webhost to a Virtual Private Server (V.P.S.), to allow for a deeper engagement with internet accessibility.

This makes for a kind of typing computers better.

[level-1] [level-1]0

### 59.1 Kittens

If anyone knows of Australasian or Asian V.P.S. hosterers aux chatons (du Collectif des Hébergeurs Alternatifs, Transparents, Ouverts, Neutres et Solidaires), please get in touch! Human rights respectin' and environmentalist practices preferred.

Meanwhile, why not work on organising such community infrastructure?

### 59.2 Starting

Running an internet server might sound like an overwhelming idea. Trying to know what needs knowing struck me as beyond daunting enough in itself. Really, charting a comfortable course was perhaps the hardest part. The actual doing unfolded surprisingly smoothly.<sup>5</sup>

It helped to break the study into stages:

1. Figure out what machinery to use for a server.
2. Prepare for logging in.

---

<sup>5</sup>Mind you, I was lucky enough to have been taught about computer files—in that limited window of time, space, and culture where a working knowledge of the metaphor was usually only justifiably taken for granted. Indeed this story continues to assume a grasp of the concept.

3. Set up a firewall.
4. Ready whichever service(s) one intends to kick off with.
5. Organise back-ups for anything irreplaceable that is not already backed up regularly.
6. Everything fine? Point D.N.S. records at things.

Here's something of the present Breydon method...

### 59.3 Choosing a server

The romance of rescuing an unloved machine and feeding it sips from a portable solar supply propped up at a sunny window, empowering loved ones to engage with the world over seasonally-responsive hours and in fulfilling ways, that appealed to me greatly. But I was not prepared to ask nor teach other members of the household to babysit a computer, when I didn't even feel ready myself. Realistically, it was going to be a while before I could power it from anything but a dubious mains blend anyway.

So first came entering a decent agreement for a fairly modest V.P.S. to be provided in a manner relatively gentle on the world. Wind power. Respectful privacy policies. Use of the proceeds towards the public interest. Ideally, non-proprietary firmware and hardware, but that is incredibly rare still in this era. Long service lives for equipment. Climatically appropriate architecture. Whatever considerations you can think of could be taken into account. If we are going to draw up yet more of the toxic "cloud" into its superfluous being, we ought to at very least be sensitive to its palpability, hey?

This then also determines the choices of operating system (O.S.) available. The hardware owner might not permit a wide range. For the sake of properly free software, secure-ish functionality for several years, and plentiful beginners' instructive material should anything bamboozle: how about the latest stable version of Debian?

If something comparable but more efficient is on offer, though, great!

For smol/slow/static content shared among a smol/slow/cosy readership, computer memory, storage, and processing capacity can all be minimal. Consult system requirements for running the O.S. without a graphical shell. That'll do.  
[level-1]

## 60 Patchwork sitemap

[breydon.id.au/meta/patchmap](http://breydon.id.au/meta/patchmap)

Updated 12 October 2022.

A smattering of coverage, progressively revealing itself, as I do the place up. Nodes marked "[H.T.M.L.]" have not been adapted to other formats just yet.

[level-1] [level-1]0

## **60.1 BREYDON's**

- homepage: A personal homepage.
- AOC: Acknowledgement of Country.
- COPYING: Copyright notice.
- all: (Almost) omnibus downloads.

## **60.2 About me**

- about me: If you are swotting up on me for whatever reasons, here are some of the sorts of things that you might find.
- pronouns & titles: Quick reference.
- most lackadaisical press-clipping scrapbook: Slack as.
- résumé-bé, bébé: An old C.V.

## **60.3 Contact information**

- contact information: How to contact me.

## **60.4 Old news**

- old news: Periodic updates.

## **60.5 Caramel BREYDON**

- Caramel BREYDON [H.T.M.L.]: in memori-Bun

## **60.6 Comix**

- comix
- AFTER I UNDERSHARED AND YOU OVERTOOK [560 kB P.D.F.]: Quiet quest for a lost soccerball.
- FLUID DYNAMICS: Aqueous allegory for a human rights movement.

## **60.7 “Adaminaby” or Marginalian Capital Territory**

- “Adaminaby” or Marginalian Capital Territory [H.T.M.L.]: part of Noted Festival's Pulpture exhibition.

## **60.8 Visible mending**

- visible mending [H.T.M.L.]: Conspicuous, colourful, folksy repair.
- Davy [H.T.M.L.]: Thermal long johns.
- Blueberry Mary [H.T.M.L.]: Pair of denim jeans.



## 60.9 After, things I'd be

- after, things i'd be: Material wants.

### 1. Supports

- supports to pursue: Some personal notes regarding N.D.I.S. stuff.
- past & current supports [H.T.M.L.]: Some things which have and have not worked for me.

## 60.10 To locomote

- to locomote: Info on getting around with motor impairments.

### 1. Wheelchair trials

- wheelchair trials: Frank examination of a range of mobility equipment.
- manoeuvrability and tight spaces: Characteristics of agile chairs.
- ease of trekking: Considerations for distance-travel and varied terrain.
- aftermarket lever drives: Equipping traditional chairs to demonstrate biomechanical respect.
- third-wheel attachments: For enhancing the classical active wheelchair.
- soft-surface runners: Helping wheeled-chairs skim over snow.

Specific makes and models:

- Stricker: Stricker mainly make handcycles, most notably for touring.
- Leveraged Freedom Chair (L.F.C.): An affordable and efficient design for the real world.
- GRIT: U.S.American commercialisation of the L.F.C.
- GRIT Freedom Chair Spartan: A powerful hiking chair.
- R.M.A.: Welsh maker of skate chairs.
- Trekinetic: High-tech all-terrain chairs.
- Lasher Sport: Quickly interchangeable castors and other bold ideas.
- Mountain Trike: Highly adaptable rambblers' chairs.
- Motivation: Low-cost, elegant equipment.
- Motivation Multisport: Adjustable court sports chair.
- Ottobock: A manufacturer of prosthetics.
- Ottobock unknown folder: Collapsible (scissor fold), box-frame chair.
- Kuschall: Classy active chairs.
- Kuschall K.S.L.: Rigid monotube chair.
- R.G.K.: Fit-fans.
- R.G.K. Octane Sub4: Rigid monotube chair.

- R.G.K. Tiga F.X.: A disinctive approach to folding a chair.
- Box: U.S. maker of skate chairs.
- Melrose
- Melrose Scorpion: A strong and light dual-tube chair.
- Melrose Hornet: A similar dual-tube chair.
- Melrose Hawk Ultra: A similar monotube chair.
- Ram Wheelchairs: Custom simple three-wheelers.
- Mogo
- Top End
- Karma: Attendant-focussed folders.
- Karma Ergo Lite 2
- Karma Eagle
- TiLite
- TiLite 2GX: A hulking folder.
- TiLite Z.R.A.
- Freedomtrax

## 2. ART CHAI

- ART CHAI: A GRIT Freedom Chair Spartan lever-propelled wheelchair.
- rims for rims: Replacing the drive wheels on GRIT's Freedom Chair family of leveraged wheelchairs.

### 60.11 'Putting

- 'puting [H.T.M.L.]: Technology criticism, accessibility improv, and increasingly theatrical literate programming.
- nevr [H.T.M.L.]: Noodly espeak voice-replacement.
- turntab [H.T.M.L.]: For dizzy touchscreens.
- typing computers better [H.T.M.L.]: Some kindly scripts and commands, which have made it easier for me to use a laptop.

### 60.12 sports

- sports [directory]
- wheelch football [h.t.m.l.]: A.F.L. Wheelchair.

#### 1. Wheelch football

- wheelchair football in 2019 [H.T.M.L.]: 2019 marked the second season of the Victorian Wheelchair Football League, and my first. I was drafted to play for St Kilda.
- wheelch footy, 2020 [H.T.M.L.]: Following my 2019 wheelch football debut, I'm on the Richmond squad.

### **60.13 Been reading**

- been reading: Notes mostly on library loans.

### **60.14 Internet housekeeping**

- internet housekeeping: Meta.
- access(ibility): Formats, protocols, accessibility.
- privacy and security: Stance and notice.
- patchwork sitemap: A partial overview of what can be found on breydon.id.au

#### 1. methods

- methods: How it works...
- writing
- captioning
- serving

[level-1]