

+ Dwarf Fortress Labor Survey Analysis +  
Aug 2021

## 1. Introduction

### a. Definitions

#### i. Labor(s)

- The jobs a dwarf will try to complete do as chosen by the player or an automated system
- Toggled on or off in fortress mode to control which dwarf is attempting to complete which tasks

#### ii. Vanilla Labor Management

- Manually changing dwarf labors without any add-ons or mods
- Typically by pressing the [v - p - l] keys with your cursor [k] near a dwarf

#### iii. 'Spreadsheet' Labor Management

- Managing dwarf labors using a 3rd party add-on that typically displays labor assignments with dwarves along the Y-axis and labors along the X-axis
- Ex. "Dwarf Therapist", dfhack "Dwarf Manipulator"

#### iv. Automatic Labor Management

- A 3rd party add-on that automatically changes dwarf labors based on certain pre-set criteria
- Ex. Autolabor, labormanager

### b. What is this?

- Short unofficial survey posted online to learn about how people manage labors
- I looked at this through the lens of "vanilla DF", you can use this data to improve other things, but that's a lot more time you wont get from me

### c. Why do it?

- Tarn mentioned something about labor use cases in an interview
- Game is fun, surveys are fun

### d. Research Questions

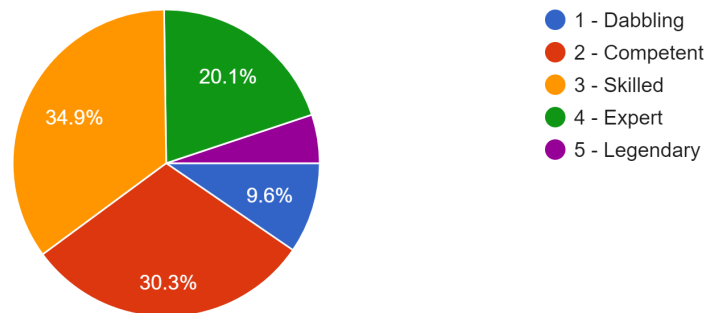
- How do people manage labors?
- Why do they manage labors in the way that they do?
- What problems do people currently have with managing labors?
- What might an updated labor system based off of this feedback look like?

e. Who replied?

- i. 900 replies over a week or so
- ii. Reddit, discord (df + kitfox), steam forums, bay12 forums
- iii. Self-Reported Fortress Mode Skill levels
  - 09.6% of skill level 1 “Dabbling” (86)
  - 30.3% of skill level 2 “Competent” (273)
  - 34.9% of skill level 3 “Skilled” (314)
  - 20.1% of skill level 4 “Expert” (181)
  - 05.1% of skill level 5 “Legendary” (46)

Please rate your skill level as a Dwarf Fortress "Fortress Mode" player.

900 responses



f. Limitations and Bias

- i. My personal bias as a player that wants a good auto system and likes spreadsheet but thinks it takes too long BUT at least I'm aware of this bias
- ii. I'm not very good or experienced with the game BUT I spent more time spoiling things on the wiki than I am happy about AND at least the data is here so do your own analysis
- iii. Sample potentially not representative of entire playerbase, just people on reddit/discord/steam forums/bay12 forums BUT it's the best we can do and we did get 900 so that's pretty good

- iv. Survey implies that people do actually manage their labors in any capacity, may not account for the portion of people that don't think about or manage labors at all
- v. I don't know all the acronyms people used in responses
- vi. Some drop out in later questions (expected)
- vii. I didn't limit 1 response per person (required google sign in), only saw one "stuffer" who copied and pasted responses

g. How'd I do it?

i. 6-Question Survey

- Please rate your skill level as a Dwarf Fortress "Fortress Mode" player.
  - a. 1 - Dabbling, 2 - Competent, 3 - Skilled, 4 - Expert, 5 - Legendary
- Which of the following is the PRIMARY way you manage which types of jobs your dwarves will try to complete? (aka "Labors" or "Job Assignments")
  - a. Automatic Job Assignments, Spreadsheet Job Assignments, or Vanilla Job Assignments, Other
- Briefly describe why you primarily use the method you selected in the previous question (and not the other methods.)
  - a. Open response
- Think about the times when you've interacted with the Labors of your dwarves. What are your most common reasons for checking or changing Job Assignments?
  - a. Open response
- What problems do you have when managing the Labors of your dwarves?
  - a. Open response
- Lastly, if you had a magic wand that could instantly improve one thing about managing Labors, what would it be?
  - a. Open response

ii. I read all the comments and write down the themes and trends

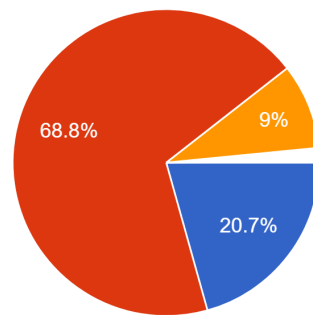
## 2. Facts (What did people say?)

### a. What do people use to manage labors?

- i. 68.8% primarily used "Spreadsheet" Job Assignments" (619)
- ii. 20.7% primarily used "Vanilla Job Assignments" (186)
- iii. 09.0% primarily used "Automatic Job Assignments" (81)
- iv. 01.5% primarily used "Other" or misread the question (14)

Which of the following is the PRIMARY way you manage which types of jobs your dwarves will try to complete? (aka "Labors" or "Job Assignments")

900 responses



- Vanilla Job Assignments (press v - p - l)
- 'Spreadsheet' Job Assignments (Dwar...)
- Automatic Job Assignments (laborma...)
- Both Drawf Therapist and autolabor
- Manual labor assignment through pne...
- uh I just use dwarf therapist? it does h...
- I use the manager dwarf too
- dfhack autolabor

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b. Why do people use the labor management method they use? (and not use other methods?)

Methods of Job Assignments in Dwarf Fortress 'Fortress Mode'

Vanilla		Spreadsheet		Auto	
Pro	Con	Pro	Con	Pro	Con
<p><b>Simple</b> <b>Authentic</b> <b>Native</b></p>	<p><b>Narrow View</b> <b>Scales Poorly</b> <b>Tedious</b></p>	<p><b>Wide View</b> <b>Batch Control</b> <b>Scales Okay</b></p>	<p><b>Overwhelming</b> <b>Denounced by Dev</b> <b>3rd Party</b></p>	<p><b>No Rebalancing</b> <b>Scales Infinitely</b> <b>No Stuck Jobs</b></p>	<p><b>Unreliable</b> <b>Can't Intervene</b> <b>3rd Party</b></p>
<ul style="list-style-type: none"> <li>• It's already there, no effort to set it up or use it</li> <li>• More tutorials exist</li> <li>• It's the way the devs intended</li> <li>• It's not hard for people that already learned to play like that</li> <li>• More challenging to use</li> <li>• Consistent with other UI</li> <li>• Simple</li> <li>• Doesn't need updating</li> <li>• Developed by 1st party</li> </ul>	<ul style="list-style-type: none"> <li>• Time consuming</li> <li>• Difficult to see big picture</li> <li>• Slow to change many roles at once</li> <li>• No big picture view</li> <li>• Hard to remember who is doing what</li> <li>• Scales poorly</li> <li>• More challenging to use</li> <li>• Hard to pick most experienced dwarf</li> <li>• Need to rebalance after population increases or decreases</li> </ul>	<ul style="list-style-type: none"> <li>• Full control</li> <li>• Fast control</li> <li>• A lot of information</li> <li>• Easy scan a lot of data</li> <li>• Dwarf Manipulator is integrated into game</li> <li>• Group toggles</li> <li>• Custom roles (ex. hauler)</li> <li>• Okay scaling</li> <li>• Easy to pick experienced dwarves</li> </ul>	<ul style="list-style-type: none"> <li>• A lot of information</li> <li>• A lot of useless information</li> <li>• Not perceived as playing the way the developer intended</li> <li>• Need to rebalance after population increases or decreases</li> </ul>	<ul style="list-style-type: none"> <li>• Don't need to spend time managing jobs</li> <li>• Don't need to rebalance after migrants or deaths</li> <li>• Jobs always have someone working on them</li> <li>• Scales infinitely</li> </ul>	<ul style="list-style-type: none"> <li>• Doesn't always delegate the way people want it to</li> <li>• No manual control</li> <li>• Developed by 3rd Party</li> <li>• Hard to configure</li> <li>• Managing job assignments can be fun</li> <li>• Takes control away from player</li> </ul>

c. Why do people manage labors?

- i. Rebalance labors when migrants come
  - ii. Fill job(s) when dwarf(s) die
  - iii. When jobs aren't finishing, check labors to see why
  - iv. Job efficiency, jobs aren't finishing fast enough (match workload to dwarfpower)
  - v. Manage hauler and non-haulers
  - vi. Employing idlers
  - vii. Specialize dwarves towards legendary
  - viii. Emergencies, ex. more miners to seal tunnel, flip lever NOW
  - ix. Managing (protecting) nobles
  - x. Expert players also...
    - Manage emotions and preferences (happiness, stress, preferences etc.)
    - Optimize for new industries, need increased flow of previously unproduced materials
    - Make custom roles (haulers, stoners, doctors, etc)
- d. When do people manage labors? (Not asked directly)
- i. On embark
  - ii. Every migrant wave after that
  - iii. When dwarves die
  - iv. When they want to start a new industry
- e. What problems do people have when managing labors?
- i. Takes a lot of time to manage
  - ii. Difficult vanilla labor controls
  - iii. Poor job prioritization (ex. Crafter hauling stone when we need a tombstone for this ghost)
  - iv. Difficult to re-balance after population swings
  - v. Managing labors of high population fortresses
  - vi. Difficult to quickly respond to emergencies
  - vii. Hard to mass disable/enable labors (ex. hauling)
  - viii. Hard to check and manage personalities and preferences relative to work
  - ix. Uncomfortable to change between management methods (spreadsheet to auto, vice versa)
  - x. Managing 3rd party updates for mods, aka "it's not vanilla"
  - xi. Hard to understand why jobs aren't done
  - xii. Figuring out why you have so many idlers, and fixing that
  - xiii. Hard to balance "load" and "throughput" (matching input/output ratios, loads, think factorio)

- f. Example problem scenarios:
- i. I need buckets but my carpeters are hauling...
    - Checking all my specialized dwarves every once in a while to see if they are doing unusual tasks and turning those off, is it fun?
  - ii. Migrants are here, who needs to be replaced...
    - Spending time in my spreadsheet when migrants come to replace old lower skilled workers with new higher skilled ones, is that fun?
  - iii. Why isn't this work order progressing?
    - Finding the one or two dwarves that are supposed to be completing this work order and disabling all labors but one, is that fun?
  - iv. There was just a huge battle, everyone help the wounded and haul corpses/items (and also build 20 coffins right now and mine out this new area for a tomb because I forgot to do that earlier)
    - Manually enabling hauling for a bunch of dwarves who weren't hauling before and remembering to disable it later, is that fun?
  - v. There's rotting meat in my butcher's shop, I have 7 dwarves that are all refuse haulers, it's been spewing miasma for 5 minutes, how can I tell them to "get that shit out of here?"
    - Disabling everything but refuse hauling on a few dwarves and waiting for them to haul the meat, is that fun?
  - vi. I played for 10 hours using a spreadsheet then switched to autolabor. It assigned 10 more miners, farmers, and weavers because the load was so high and I didn't know it before
    - It's hard to see how much dwarfpower is required for your designations/orders at any given moment. Difficult to match labors to job load

### 3. Opinions (What do I think about it?)

- a. Considerations...
  - i. Be careful about replacing 'fun' with 'easy'
    - How much of these "problems" contribute to the fun and charm of the game?
    - What would we lose by "fixing" or changing or making these things easier?
  - ii. Mods aren't going away, nothing will stop people from using spreadsheets with vanilla
- b. Things that are important to address in a revised labor system

- i. Job priorities
    - Dwarves can do many things, but some things are more important than others
    - How can you prioritize jobs now?
      - a. [Designation priority](#) (mine hallway completely before connecting rooms )
      - b. Work order priority
      - c. “Do task now” option
      - d. Remove all other job assignments
    - How can we make sure the ‘important’ jobs are finished before the less important jobs?
    - Fortress-wide job priority rankings? Let people change it? (ex. Hospital, Cook, Build, Whatever?)
  - ii. Specialization
    - Let the best dwarves do the job
    - People want legendary dwarves
    - Little benefit to spreading experience across many non-specialized dwarves (other than completion times)
  - iii. [Temporary](#) calls for more help for certain jobs
    - Mass hauling, “Clean up the fortress”
    - After battle, “Help the wounded, haul the dead”
    - Big mining designation, “Need mining conscripts”
    - Ran out of wood, “Chop wood now, haul it too”
  - iv. Addressing workload and capacity
    - Where are my dwarfpower bottlenecks relative to my work orders/designations?
    - How fast are my orders being completed?
    - Why is something taking so long?
  - v. Rebalancing after population swings
    - Seamlessly integrate migrant workers into the fortress flow
    - Keep a fortress limping along after a siege, instead of grinding to a halt
  - vi. Dwarf preferences
    - Dwarves have preferences and goals
    - Let the dwarves decide what they want to do, to an extent
- c. What does a Vanilla Autolabor system look like?
- i. A vanilla auto-labor management system should...
    - Prioritize higher importance jobs over lower importance jobs
      - a. Why? Important work is never interrupted by hauling



- Automate so dwarves can (thematically) manage their own labors
  - a. Why? Scales infinitely, minimal time investment
- Consider skill level so the highest skilled dwarf will typically do the job
  - a. Why? Dwarves can specialize, become legendary
- Always have at least one dwarf assigned to each labor, at any given time
  - a. Why? Jobs are rarely ever left finished
- Rebalance roles when population goes up or down
  - a. Why? Migrants are assimilated, deaths are accounted for
- Consider dwarf own personal preferences and goals
  - a. Why? Dwarves can do what makes them happy, sometimes
- Manage shifts and reduces overworking (unless you want to)
  - a. Why? Balances workload with dwarfpower
- Allow for temporary boosts in workers for a job
  - a. Why? Offers some emergency response capability
- ii. How could this be done?
  - A default job priority list (high, med, low tiers associated with each labor?)
  - Automatic labor assignment logic tree
    - a. Can it be done with what we have in our fortress?
      - i. Workshops? Tools? Reagents?
    - b. Who wants to do it?
      - i. Preferences? Busy-ness?
    - c. Who can do it best?
      - i. Skill? Tools? Health?
    - d. How many people can do it?
    - e. How many people should do it?
    - f. How fast should it be done?
    - g. Who is the least busy?
    - h. What else? I'm not a developer
  - Ability to temporarily expand labor access to all dwarves to handle emergencies

#### 4. Appendix

- a. Files and Links

- i. [Raw Data](#) (Google Sheets), If you didn't like this doc feel free to look through the data yourself
  - ii. [Survey PDF](#) (Google Drive)
  - iii. [Steam Forum Post](#)
  - iv. [Original Reddit Post](#)
  - v. [Clinodev's Reddit Post](#)
  - vi. [Bay12 DF Forums Post](#)
- b. Thanks to...
- i. Clinodev (from everywhere?)
  - ii. Dr\_Somgosomgo (from DF discord)
  - iii. Fleeting\_Frames (from DF reddit)
- c. Future research questions that came out of this
- i. How can job assignments work with military training schedules?
    - Can my miners take shifts for training and mining?
  - ii. How would a shift system work with dwarf stress and 'tiredness'?
- d. The "Wouldn't it be cool if..." Section
- i. Job [Shadowing](#) was a thing (Military units trail others already) Coaching? Apprentices? Guilds?
  - ii. You could post an order for specific workers to migrate? Come with caravans? Human trafficking? Slavery?
  - iii. Labor control was tied to the manager role? Org chart? Job board?
  - iv. Dwarves could have idle hobbies? Dwarves doing things they want to do for fun without a work order
  - v. Fishing for fun, crafting for fun, pottery, exploring, playing with animals