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This is Apple's Third Founder

*Brian Heater Spends Two Days
in the Desert with **RON WAYNE***

** EXCLUSIVE **



Plus:

LG DoublePlay

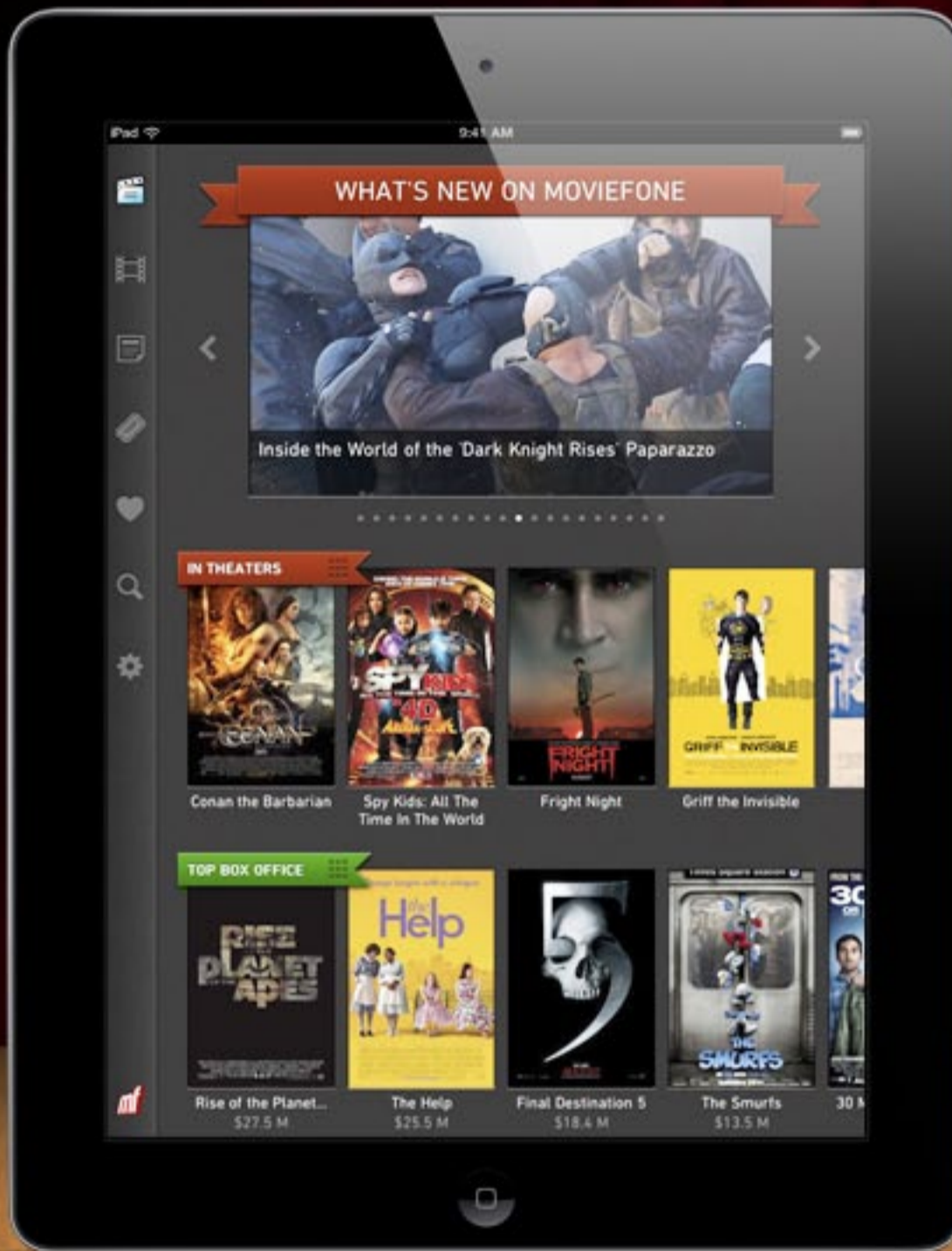
Jawbone Up

Lenovo IdeaPad U400

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Android Stays Strong, WebOS Opens Up and Twitter Gets a Facelift

Editor's Letter

The Android faithful got some good news on the home front this week. According to the NPD, which just released its most recent update on how the war for mobile devices is going, Android's share has stepped up from 52 to 53 percent since the firm's Q2 report. During that same period, iOS remained flat at 29 percent, while RIM continued its slide, down one percent to 10. Symbian, webOS and Windows Mobile also saw declines over the past 12 months, their sacrifices fuelling the growth of Windows Phone, iOS and Android.

Perhaps one of those, webOS, will see a little bit of new life going forward, with HP indicating that it will provide its code to the open source community. This could result in the little OS finally getting picked up by other manufacturers, but more likely it will live on as little more than a plaything for the hacking and modding community. That's not a bad fate, though — certainly beats printer purgatory.

Nokia, for its part, seems happy to let Symbian slide down-market as it pushes its upper-tier devices to Windows Phone. The first of those



has had confirmation of a US release: the Lumia 710 getting a January 11th berth on T-Mobile, priced at a very reasonable \$49. Compared to the Lumia 800, the build quality and features here are lacking, but at that on-contract MSRP

it's hard to be too disappointed in this 3.7-incher.

Apple, meanwhile, was rumored to be purchasing a company called Anobit, a flash designer that could help Cupertino's brightest start designing their own memory in much the same way that the purchase of P.A. Semi led to custom processors. Initially there was talk that this would also include the actual manufacturing of flash memory, but that was later retracted, removing any fears that Apple might get its hands dirty with actual fabrication.

There was a lot of big talk about tiny particles coming out of CERN this week, European home of the world's largest particle accelerator, the Large Hadron Collider. There, researchers are hunting for the mythical Higgs boson, or "god particle," an atomic unit that has been predicted by particle physics but not yet confirmed to exist. It was thought we might finally get



that confirmation this week, but, after a two hour news conference punctuated with more technobabble than a Geordie La Forge highlight reel, we were instead told that they haven't found any solid proof. They're getting closer, though.

On the web, Twitter refreshed its web interface to streamline and simplify things, resulting in a much cleaner presence at a website that few serious Twitter users actually visit frequently. But, that may change thanks to Twitter pushing out app updates to many mobile platforms that were, almost universally, disliked.

Meanwhile, Google released Currents, which had been code-named Propeller for a long time. Currents is basically the company's take on a more posh news aggregator. It pulls in RSS feeds and presents them in a sophisticated looking way. Of course, if you're reading this, you've already found another, very sophisticated way to get your news, but we won't mind if you look elsewhere, too.


Finally, we filmed another great episode of The Engadget Show this week, our last of the year. I got to take a short but exciting spin on the BRD Redshift electric motorcycle, while Zach Honig went to Tokyo and flew in the brand new Boeing

Twitter refreshed its web interface resulting in a much cleaner presence at a website that few serious Twitter users actually visit frequently

787. We also saw more of the Tokyo Motor Show, which we covered in the last issue of Distro, and had a great conversation with our founder Peter Rojas about the year's top stories and gadgets. That episode is on the site for your viewing pleasure.

And now, for your reading pleasure, we have a very special issue. Our Brian Heater spent the better part of a week in Pahrump, Nevada speaking with Apple's oft-forgotten third co-founder, Ron Wayne. It was his copy of the signed contract for the founding of Apple Computer Co. that recently sold for \$1.6 million — but Wayne tragically sold it years ago for a paltry \$500. That's just one of many unfortunate turns of events for the man who sold his share in the company soon

after it was founded for a mere \$2,300. Had he kept it, it would be worth billions today.

On top of that, we have a double-header of LG reviews: the DoublePlay and Nitro HD. We see if Lenovo's book-shaped IdeaPad U400 is worth its weight in pulp and put the Jawbone Up through a test so stringent we wound up breaking two of the things. (Just kidding, the Up has a tendency to break if you look at it too hard.) We also have a fresh installment of IRL and Ross Rubin's take on whether webOS will actually find more success as an open operating system. Now, kick back and enjoy. 



TIM STEVENS
EDITOR-IN-CHIEF,
ENGADGET



“I really believe I will probably wind up as a footnote in history because I happened to have known someone.”

This Way In...

Cover Photo; This Page: Brian Heater

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Lenovo IdeaPad U400

By Dana Wollman

LAST WORD

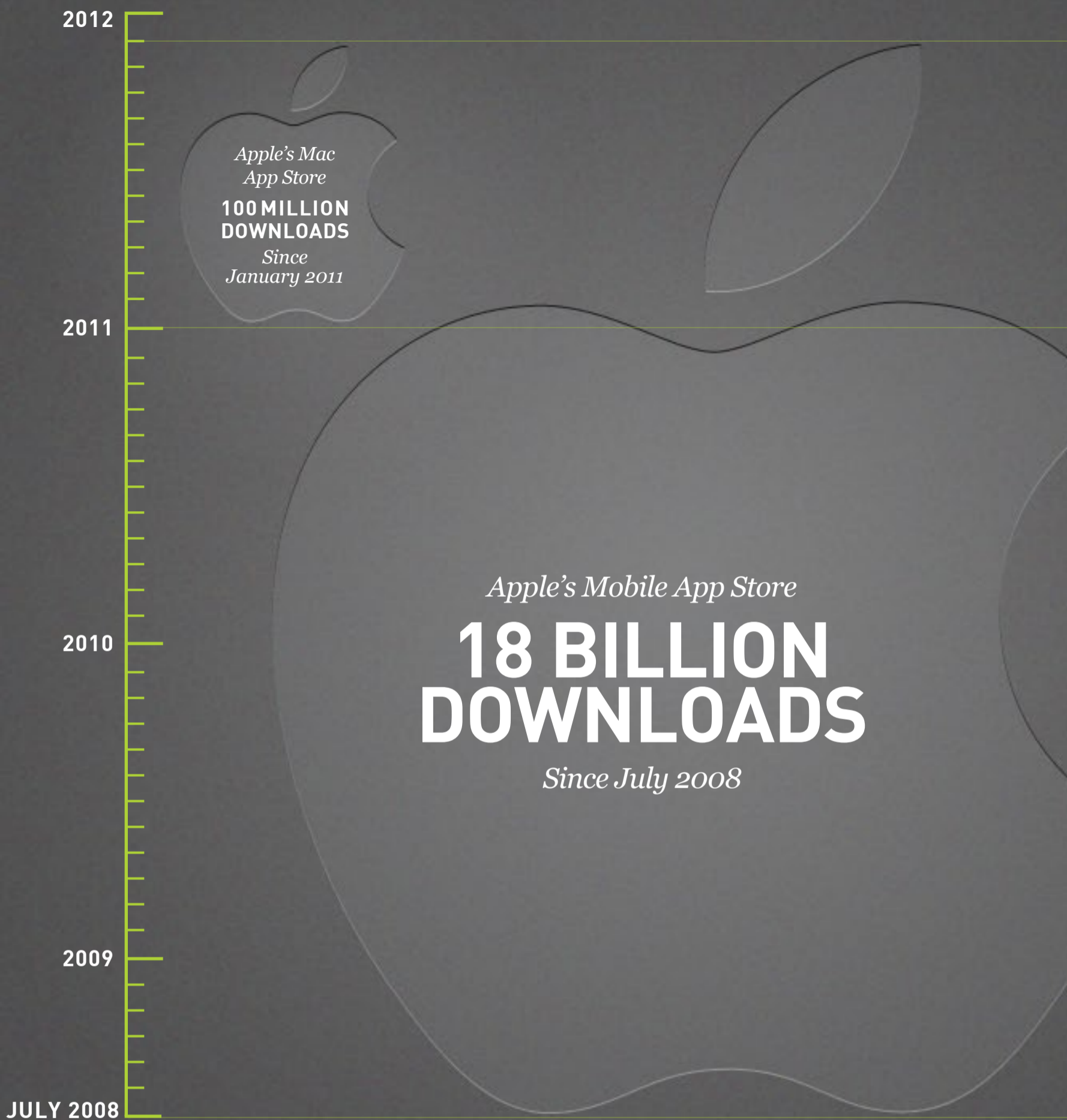
The One and Only

By Box Brown

PROFILE

Two Days in the Desert with Apple's Lost Founder

By Brian Heater



The Weekly Stat

APPLE MAC STORE BREAKS THE 100 MILLION DOWNLOAD BARRIER At just under a year old, Apple's Mac App Store is celebrating a fairly significant milestone, hitting the 100 million download mark, a fact the company celebrated with a customarily self-congratulatory press release. The desktop store hit the scene in January of this year, just ahead of CES — at present, it's home to "thousands" of apps, according to Apple. Granted, these numbers pale in comparison to the some 18 billion app downloads for Apple's other App Store, but still, not bad for a year's work. — *BRIAN HEATER*

WEBOS' OPEN SORES

Switched On



BY ROSS RUBIN

Ross Rubin (@rossrubin) is executive director and principal analyst of the NPD Connected Intelligence service at The NPD Group. Views expressed in Switched On are his own.

HP's decision to contribute webOS to the open source community represents, at the very least, a detour from the company's plans to "double down" on the operating system acquired from Palm, Inc. The good news for fans of the OS is that HP will continue to invest in the software's development, albeit probably not at the unsustainable rate at which it was going it alone. And for webOS fans, the decision is certainly more favorable than another possibility that HP considered — ending the development of webOS software as abruptly as it ended the hardware. ¶ Still, webOS faces an uphill climb if it is to emerge as a viable option for device makers. HP itself says that it may not enter the webOS device market again until 2013 and we've seen no public statements from other major device makers champing at the bit to build devices based on the software, at least not in its current state. That means that the addressable market for webOS updates is the relatively meager installed base of TouchPads and the handful of Pres, Veers and Pixis; and many owners of those devices will likely move on as their contracts expire.

Surely, the clever open source community will find a way to get webOS on all kinds of existing devices. Here, the software may even get something of a helping hand from its rivals Android and the coming ARM-based version of Windows. However, as Switched On discussed with regard to an Android netbook, that's an even smaller hobbyist market.


One of the challenges that HP faced with webOS was that it had never been at the center of an ecosystem trying to build a developer base for a consumer operating system. Likewise, though, it

... HP says it is ready to step into the kind of role that Google serves for Android.

has never been at the center of a major open source project, which involves managing not only internal development constituencies but external ones as well. Still, HP says it is ready to step into the kind of role that Google serves for Android.

Speaking of Android, its incredible momentum begs the question of whether we need another open source mobile operating system from which to choose. Perhaps the most viable recent open-source challenger to Android, MeeGo, managed to find its way onto one phone (the Nokia N9) and one netbook (the ASUS X101) from major manufacturers before being folded into yet another merged OS offering called Tizen. WebOS will also continue to face intense competition from closed-source vendors: Apple, RIM and Microsoft.

These competitors will have development in high gear during a year when webOS is going through yet another transition.

Perhaps the biggest question, though, lies not in whether HP and the open source community can execute on making webOS a stronger competitor, but whether anything can carve out turf between the iOS monolith and the Android skyline. So far, such ground has not proven fertile in the mobile OS turnaround attempts of Microsoft and RIM. However, as mobile devices, particularly tablets, take on more PC-like tasks, there is the highly successful example of Windows on the PC to pursue, the very offering that HP — and many other companies — won't hesitate to embrace in future tablet generations before revisiting webOS. 



Jawbone Up

The Up wristband has promise as a fitness tracker, but we can't recommend it until Jawbone can make it stop bricking.

BY DANA WOLLMAN

Back in July, Jawbone did something surprising. The company, best known for its Bluetooth headsets, announced it was cooking up a wristband called “Up” — a wearable device that would track the wearer’s sleeping, eating and exercise habits. At the time, we didn’t know much more than that, but given the company’s expertise in wearable tech, we assumed it would at least have

a Bluetooth radio, tying it together with all the other products Jawbone sells.

As it turns out, the wristband doesn’t sync your vitals wirelessly and for better or worse, it doesn’t work quite the way we thought it would. To use the wristband, you’ll need an iOS device — no other platform is supported, and there isn’t even a mobile website to which you can upload all your data. Then again, it



does things other fitness trackers don't: it monitors when you're in deep or light sleep, so that it can wake you when you're just dozing. And because it's waterproof up to one meter and promises up to 10 days of battery life, it's low-maintenance enough that you can wear it every day, which could be key to making some healthy lifestyle changes. So how did Jawbone do, stepping so far outside its comfort zone? And should you consider this over identically priced fitness trackers such as the new Fitbit Ultra? Let's see.

Design and Fit

There's not much to Up, which is a good thing considering you're supposed to wear it day in and day out. The band, available in three sizes, is made of springsteel wrapped in thermoplastic, hypoallergenic rubber. Most importantly, it's waterproof up to one meter (3.3 feet), and dries quickly, which is what allows you to wear it continuously for days at a time. In contrast, you'd need to remove your Fitbit every time you take a shower.

Unlike most wrist candy, the band doesn't fasten but instead has open ends that curl around your wrist — not unlike a snap bracelet. One end is topped off with a metal piece that you'll press

every time you want to let the band know you're going to sleep, getting out of bed or beginning / ending a workout. (There's a vibration motor inside and also an LED light that flashes different colors, so you'll get plenty of feedback confirming you're in the right mode.) On the other end, there's a metal cap covering a 3.5mm headphone connector, which you'll need to sync the band with your iDevice and also re-charge via your computer's USB port (the band comes with a small USB adapter specifically for this purpose).





The wristband is thinnest at the edges, though for the most part it's about as wide as those ubiquitous Livestrong bands. Still, it's discreet enough that it can pass for a proper bracelet (a rugged, slightly masculine bracelet, but a bracelet nonetheless). It's also available in seven colors, though if you'll indulge us for a moment as we dole out some fashion advice, the black goes with more outfits and calls less attention to itself on days that call for dressier digs. As for fit, Jawbone has a printable ruler that you can use to measure the circumference of your wrist. Based on that single measurement, we ended up with a bracelet that fit snugly, but didn't come close to cutting off our circulation. And that's just fine with us: the last thing you want is a bangle sliding down your wrist

and hitting the palm rest every time you peck away at your laptop.

Setup and Charging

To set up and use the wristband, you'll need to download the free, corresponding app from the App Store if you haven't already. Then, just plug the band into your iDevice's headphone jack, open the app and follow some onscreen instructions — in particular, entering your name, email address, height, weight and sex. Within a minute or so, then, you should be up and running.

And that, friends, about describes how you'll be using the wristband on a daily basis (minus the part where you enter your weight, of course). You'll need to plug the band into the headphone jack every time you want to sync it. The truth is that Up has a rated battery life of ten days, which means you could spend the better part of a week wearing this thing 24/7 and not syncing it. Still, we quickly fell into a pattern of syncing our vitals at least once a day, if only because we were curious to see how well we slept this time.

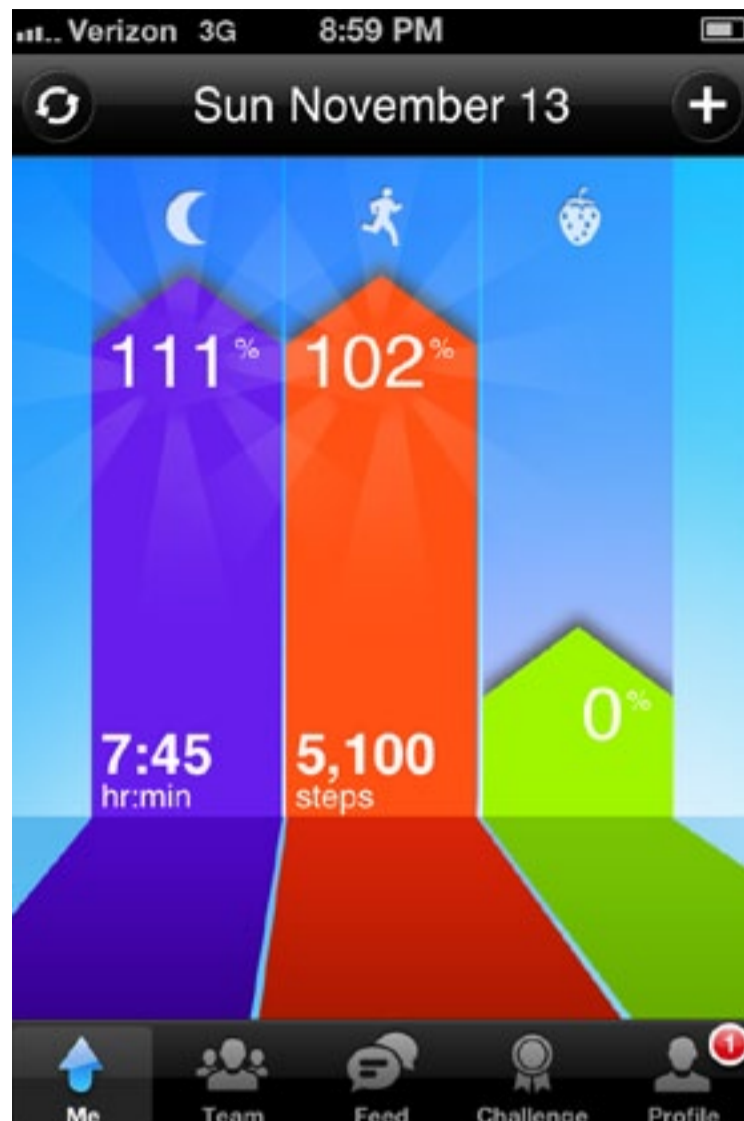
Similarly, we chose to charge most days, even though we didn't have to. After 18 hours of use, we were still at 87 percent capacity; after about two days, we were down to 35 percent. So perhaps Jawbone's claim of ten days was exaggerated, but you can at least use this for a few days uninterrupted. Ultimately, though, we're at our least active when we're sitting in front our PC, so we don't mind going under the radar for a little

while and letting a few burned calories go unrecorded — even if we’re not running low on power.

Also, we should tell you that although we didn’t lose either the proprietary USB charger or the cap covering the end of the bracelet, we had to go out of our way not to. We got into the habit of placing both the cap and dongle in a clean corner of our desk whenever we weren’t using them, but we can see where a less meticulous person could lose them within the first week. Which is bad, because that bracelet becomes a lot less comfortable (and more conspicuous) when you remove the metal cap to expose the male 3.5mm headphone jack connector. Jawbone is quick to point out that although a wireless radio would have eliminated the need for wired syncing, it would have made for a thicker bracelet, and shorter battery life. So at the end of the day we can live with the tethered setup, though it is pretty clumsy.

iOS App

The app organizes your data by day, and then according to three overarching categories: sleep, activity and food intake. When you launch the app the first thing you’ll see will be a bar graph for the current day called the “Me screen,” which features three vertical, color-coded bars arranged side by side, representing the hours you’ve slept, the number of steps you’ve taken and how many energizing meals you’ve consumed. At the bottom of the chart, you’ll also see some basic



stats, including how long you slept and how many steps you walked. Even without those numbers, though, you can tell at a glance roughly how well you’ve been doing. For instance, the blue sleep bar will be taller if you’ve gotten seven hours of shut-eye instead of five. Want to put that all in context? Swipe that chart to the right and you’ll see yesterday’s graph. You can’t pick a day from a calendar; you just keep swiping until you reach the day you want.

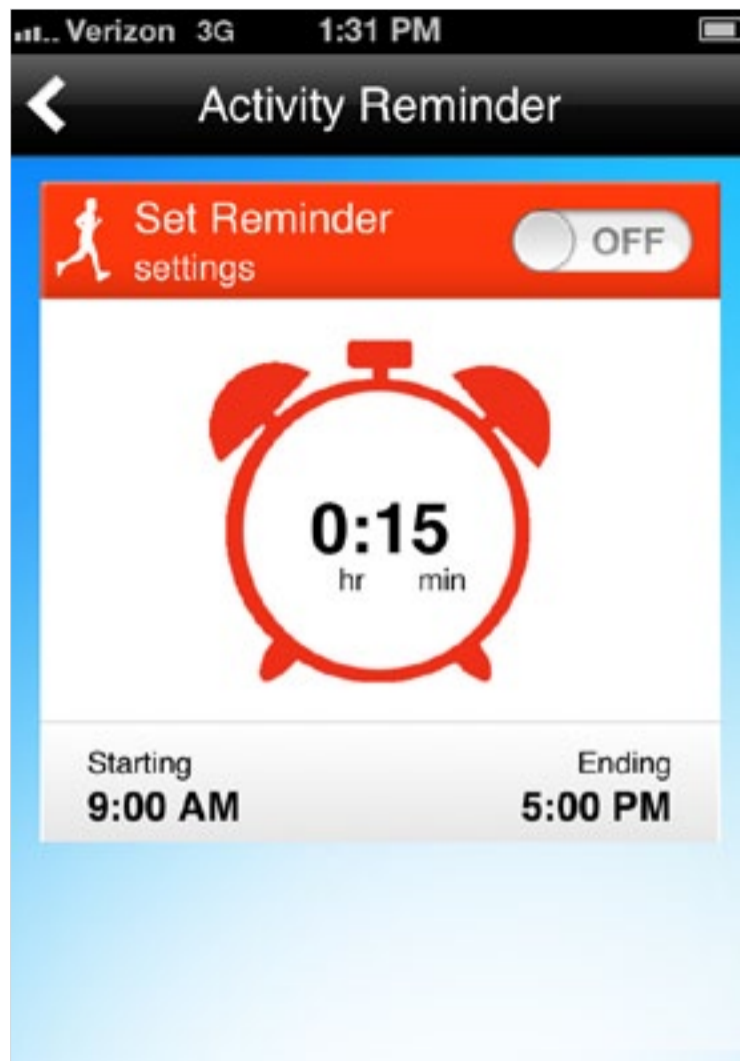
With us so far? Good. By default, Up has certain daily goals in mind — say, seven hours of sleep per night. You can change these to whatever you want; the point is, each day’s bar chart will show percentages above each category. So, if you slept five hours and 44 min-

utes instead of seven, you'll see a grade of 82 percent for the day. Exceed that goal and you'll see a halo effect around the bar, a subtle but clear reward for a job well done.

You can dig deeper into those charts, but not much. If you tap the bar chart, it'll turn into a longer-form graph called the Live Feed, which you can only view in landscape mode. Here, the bars are smaller and the information is more granular, but the idea is the same. You'll see color-coded bars on a horizontal axis, representing the hours in the day. Swipe through it and you'll see up-to-the-minute stats on what you ate, how that food made you feel, how many steps you took and whether you were awake or in deep or light sleep. Up tosses in a few extra pieces of information at the bottom of the screen, including your mileage, calories burned and time spent doing something active. When it comes to sleep, that means seeing a breakdown of how much time you spent in deep versus light sleep. You can't filter the Live Feed according to date or the type of data. And the information itself isn't much more detailed than what you'll see at a glance on the home screen. It's certainly not materially different than the stats Fitbit collects.

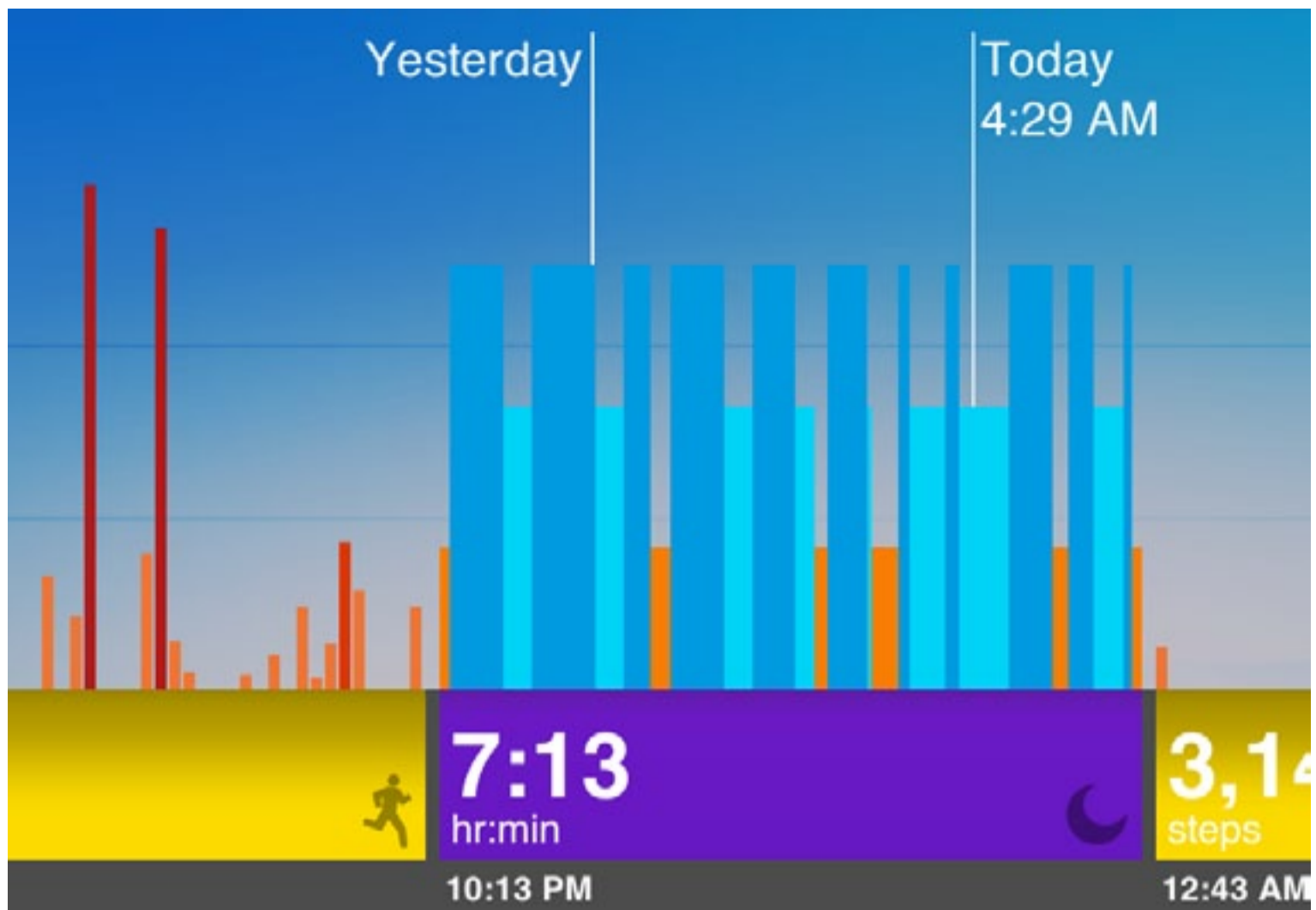
Social Feed, Challenges, and Other Features

In addition to hosting all this info in pretty charts, the app is home to a handful of other features. It's from here that you can take a photo of your meal



or set an alarm to wake you up when you're in light sleep (more on both of these in just a bit). You can also set the wristband to buzz as a way of reminding you to get up and move if you've been sitting "too long," whatever that means for you — it could be every fifteen minutes or every hour, depending on how sedentary you are.

And what would a fitness tool be without a little social networking? The service allows you to befriend other Up owners, at which point all of their activity — everything from their sleep quality to how what they ate — will appear in a list, aptly called the Feed. You can also create so-called teams with groups of people, and also pose challenges to them. In fact, if you're more private you can pose challenges to just yourself



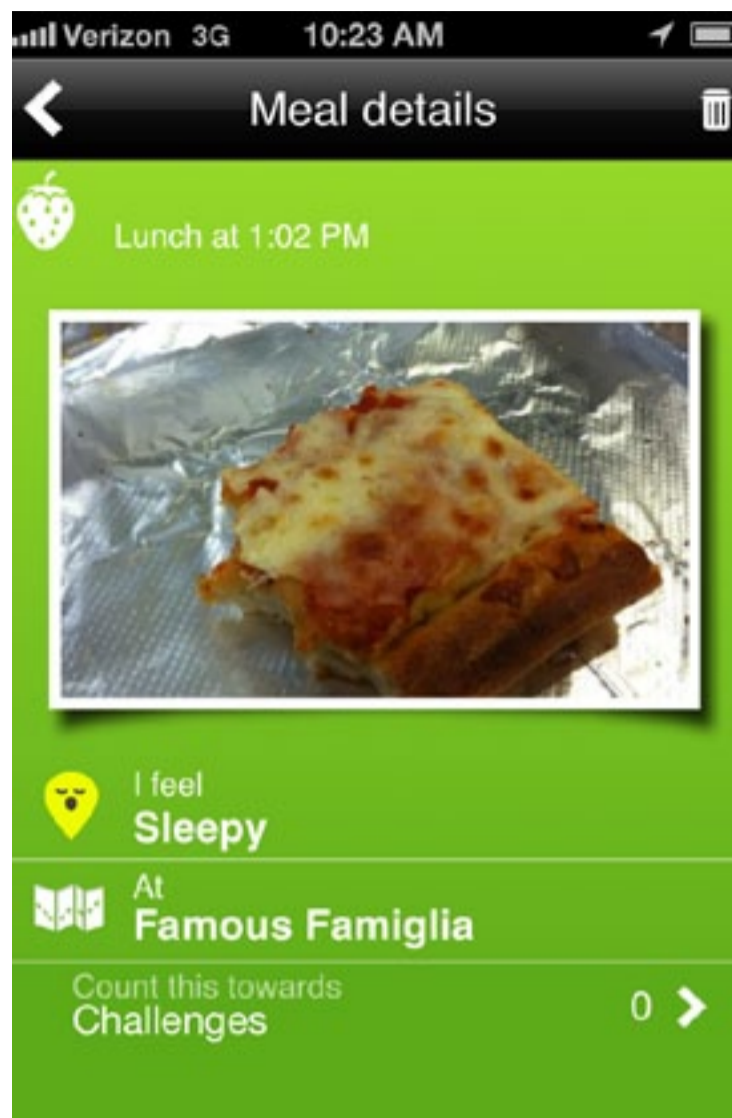
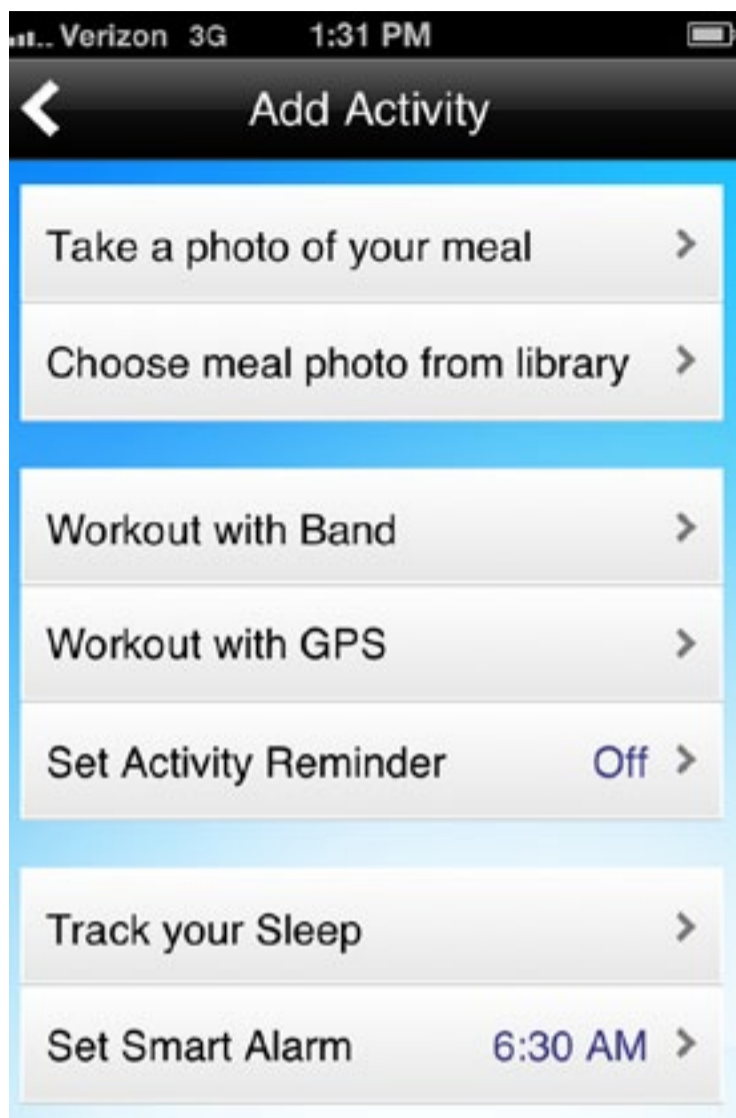
if you're the modest type — e.g. “How much sleep can I get this week?”

Activity Tracking

Like Fitbit and other fitness products, Up packs a pedometer, allowing it to gauge your activity levels by tracking the number of steps you take. (The second-gen Fitbit Ultra does it one better, though, with an altimeter that monitors how many flights you've climbed.) All told, our mileage counts seemed a bit generous, but then again, we had the same complaint about Fitbit. For example, on a day when we did not work out, it said we walked 4.26 miles. That seems like a stretch given that on that particular day, all we did was walk to the subway (about half a mile), from the subway in Manhattan to our office and back (another three-quarters of a

mile in total), and from an apartment in Brooklyn to a nearby park (one mile, roundtrip). Then again, we do appreciate that when we worked out on the elliptical machine, which requires you to make some pretty sloppy, ill-defined steps, the band did a good-enough job approximating our mileage.

When you're beginning a workout, you can press the end of the band once to let it know you're about to exercise. (Likewise, you'll want to press it again when you're finished.) The idea is to distinguish between normal moving about and a concerted workout, but given how limited the data selection is, we don't really see the point. Whether we call it a workout or not, the band knows how many steps we're taking, and in either scenario, it doesn't account for metrics such as pace or heart rate. The only



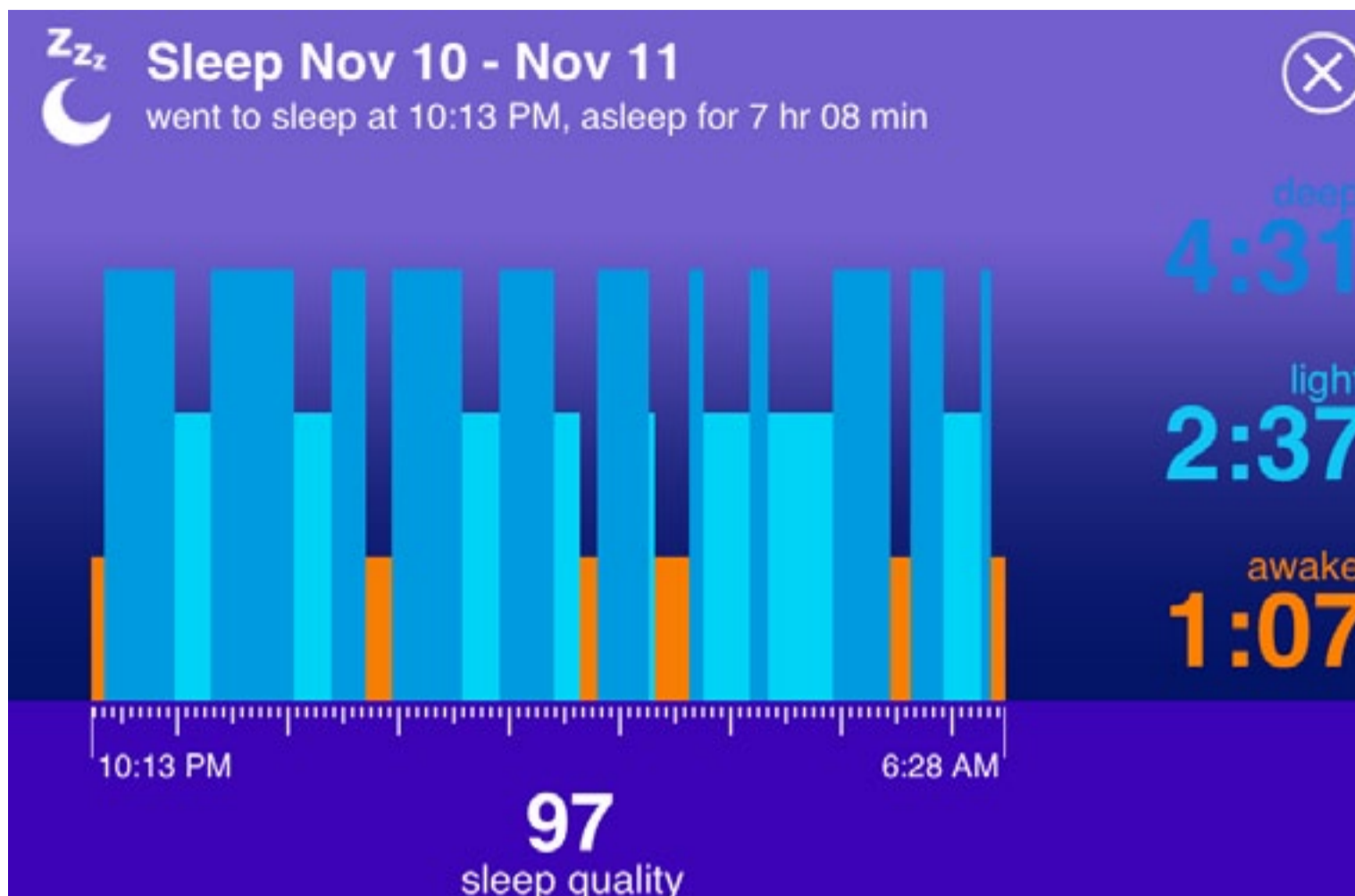
time we felt compelled to set the band to workout mode was when we set a personal challenge in which we wanted to see how much time we could spend exercising in a given week. Otherwise, you won't lose any credit if you forget to send the band into workout mode, which is actually all too easy to do.

Food Diary

Up claims to track what you eat, but it would be more accurate to say that *you* track what you eat — when you remember to. Whereas the wristband has sensors that can monitor your sleep and activity patterns, the food tracking bit is based completely on input from you — specifically, photos you take of your

meals using your iDevice. A couple hours after you eat said meal, you'll see an alert on your device asking you to rate the meal using one of five emoticons — a selection that includes options like stuffed, sleepy and OK. The idea isn't to track your calories or to shame you into eating healthier, but to track how you feel after you eat certain foods, and then, over time, give you credit for eating meals it's learned are energizing. (By this metric, then, you can game the system so that it thinks Big Macs are nutritious.)

We see a few problems here. One, even after wearing the band for several weeks, we often forgot to photograph our food until we had two bites



of food left. Secondly, even when we did remember, we were hesitant to be That Guy in the restaurant, snapping pics of our meal with a cell phone. It's one piece of the Up regimen that just doesn't feel natural, which is ironic, since the bracelet itself is designed to blend in and not call attention to itself as you carry on with your daily routine.

Most importantly, though, this cutesy food diary ultimately couldn't persuade us to lay off the pizza, cookies and bagels, even though they invariably leave us feeling sleepy, unsatisfied and a tad sheepish for eating like a five year-old. Having used both Up and Fitbit, we found it more useful to see a list of our daily caloric intake against the calories we were estimated to have burned that day. Now it's true, Fitbit's food tracking system is sorely in need of a makeover:

right now, it requires you to choose your meal from a list, which is mostly populated with items from specific cookbooks and restaurant chains. Still, as annoying as it is to pretend your bagel and cream cheese came from Friendly's, it still gives you some approximation of how much you're consuming. That's all we want, really. We don't need photographic evidence of that cheeseburger that's only going to pad our behinds.

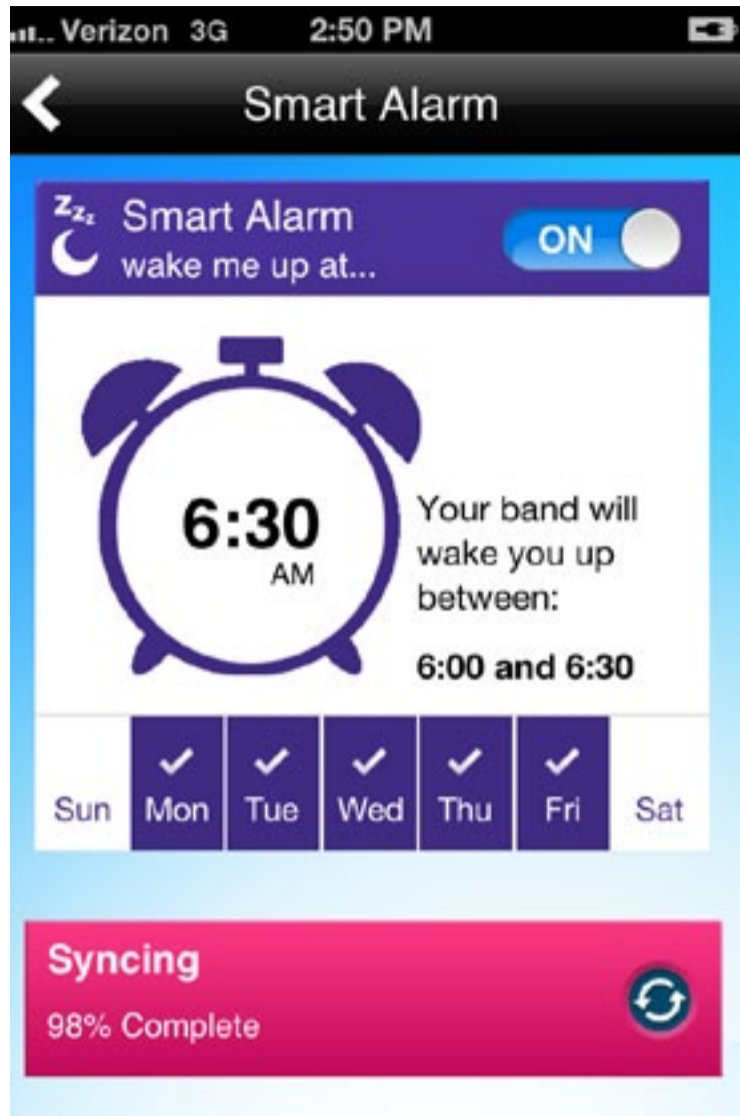
Sleep Analysis

Like Fitbit, Up uses sensors to track your sleeping patterns, though Jawbone goes a step further, recording how much time you've spent in deep versus light sleep. Which brings us to one of the band's marquee features: it doubles as an alarm, sending vibrations through your wrist when it's time to start the day.

Setting this up through the app is simple enough: just select the time as well as the days of the week you want it to go off (e.g. Monday through Friday). Once you're ready to retire, send it into sleep mode by holding down the edge of the band until it vibrates and a blue LED light flashes. When you get out of bed in the morning, hold the end of the band again until it vibrates and flashes green.

But here's the twist: Up wakes you within half an hour of your alarm, depending on when you happen to be sleeping lightly (and therefore easier to rouse). Indeed, there was one morning when we were already sleeping fitfully, and the band began vibrating 30 minutes before we needed to get out of bed. And though we were none too cheerful about this 6am interruption, we have to admit we weren't terribly groggy either.

The problem is, when you don't urgently need to get up, it's all too tempting to grab your cell phone, set a new alarm and doze for an extra 30 minutes. What's more, those vibrations are fairly easy to ignore, as the wristband falls silent after a minute or so. It would be helpful if the band could use its step counter to detect when you're out of bed, and then turn off the vibrating motor — kind of like how your bedside alarm won't shut up until you hit dismiss (or at least snooze). Ultimately that day, we did what many of you would have done: we nodded off for another half hour. As it happens, though, we went on to have the kind of spazzy morning where we mistook body wash for shampoo, so per-



haps Jawbone was on to something by waking us when it did.

In addition to tracking your sleep states, the wristband collects data on how long you took to nod off and how many hours you slept in total — data that it uses to spit out an overall sleep quality rating. Fitbit does this too, although it actually tells you how long it took you to fall asleep; Up's iOS app shows a slim bar at the beginning of your sleep graph, illustrating how long you were awake, but that length of time isn't actually visible. Maybe Jawbone will throw that into version 2.0. Not a deal-breaker by any means, though we're naturally curious about such things.

Then again, when it comes to sleep tracking, Up's data is more accurate

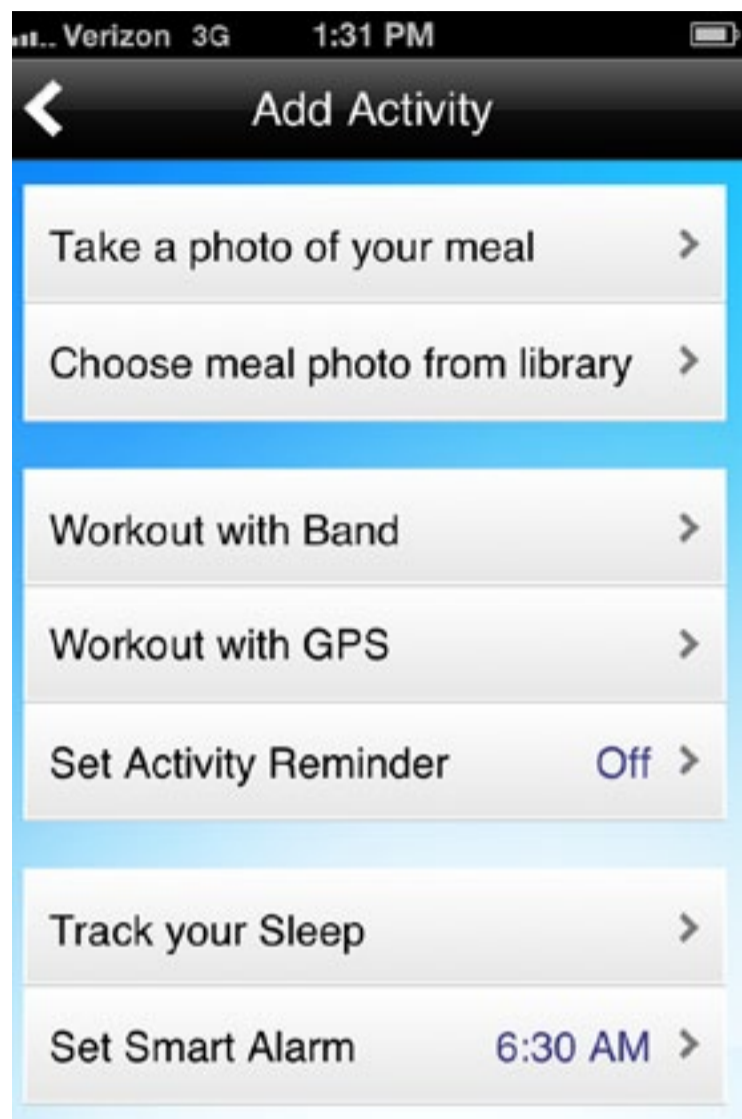
and also, thorough. Fitbit, for instance, will tell you how many times you awoke during the night, but that tally appears to be based on activity detected by the accelerometer, which means you could, in theory, fool Fitbit into thinking you're asleep when really you're staring at the ceiling, worrying about the day ahead.

Reports of Breakage

Soon after we began our testing, we started hearing grumbling from early adopters, who reported their wristbands had suddenly and mysteriously stopped working properly. Sure enough, after less than two weeks with ours, the vibration motor became unresponsive, making it impossible to take advantage of that smart alarm feature. (Fortunately, the device continued to collect data, so even though the band didn't vibrate when we put it into sleep tracking mode, it still came back the next morning with stats on how much shut-eye we'd gotten.)

Jawbone sent us a new band, and has been issuing free replacements to everyone who's reported issues with their devices. Once we received it, all we had to do was plug it into our iPhone and agree to sync our existing account with this new band. At least that part's painless. Still, within 24 hours we noticed the vibration motor had once again appeared to stop working. This time, it didn't register any data.

This apparent pattern is troubling for a couple reasons. For one, Jawbone owners have been reporting a disturb-




ing range of issues, including difficulty syncing with iOS and sharply depleted battery capacity. Travis Bogard, vice president of product management and strategy, said he suspects these myriad problems might all stem from the battery not being charged enough. Then again, he admits the company's engineers haven't yet diagnosed the underlying problem. Which brings us to our second concern: until Jawbone is able to explain why its devices are malfunctioning, it won't be able to deliver any kind of long-term fix. Offering replacement devices makes for smart customer service, but it sadly won't do much good if these secondary (or even tertiary) devices eventually brick too.

Wrap-Up

It's a shame the Up wristband is breaking all over the place, because it's otherwise a promising idea for a gadget. Jawbone's on the right track with the hardware: the band is comfortable, waterproof and doesn't call much attention to itself. It can tell when you're sleeping deeply, as opposed to lightly dozing — something competing fitness trackers can't do. Sure, we wish the Up band charged wirelessly, but we appreciate that by nixing a Bluetooth radio, the company was able to make the battery life as impressive as it is. All told, it's the kind of device we can easily see ourselves wearing day in and day out (and we should know: we tested this for weeks).

Where Up really needs work is in its app: as slick as it is, it feels more shallow than Fitbit's website, and it isn't quite as fun to use either. It would also be nice to see Up expand beyond iOS to Android and other platforms. The good news, though, is that this is precisely the sort of thing Jawbone can keep working on, even now that the Up has begun shipping. The company says it will release an app for Android. And it can most certainly beef up the current app so that early and later adopters alike can benefit from additional features.

But all that means little when the device routinely malfunctions. Though the company says a minority of users have reported breakage, it's telling that both of the units we tested over the past month have bricked — one of them within 24 hours. Worse, Jawbone hasn't

yet diagnosed the root cause of these problems, a collection of maladies that run the gamut from a rapidly draining battery to a silent vibration motor. We still feel that the Up has promise, but until its engineers iron out the kinks, we can't in good faith recommend it. 

Dana Wollman is Reviews Editor at Engadget, a marathoner, lover of puns and a native Brooklynite.

BOTTOMLINE

Jawbone Jawbone Up

\$100

PROS

- Waterproof up to 1 meter
- Long battery life
- Smart Alarm feature is ingenious

CONS

- Reports of bricking and withering battery capacity
- Only compatible with iOS devices
- Food tracking is useless
- iOS app is light on features for now

» The Up wristband has promise as a fitness tracker, but we can't recommend it until Jawbone can make it stop bricking.



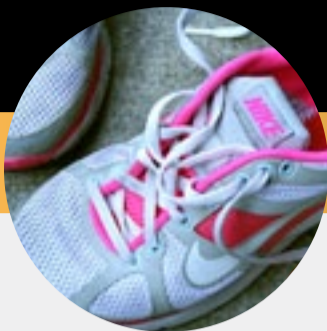
IN REAL LIFE

Welcome to IRL, an ongoing feature where we talk about the gadgets, apps and toys we're using in real life and take a second look at products that already got the formal review treatment.

1.



2.



3.



Nike+, UTStarcom PPC-6700 and the Droid Incredible

BY ENGADGET STAFF

We have an inside joke among the Engadget staff: one of these days, we say, we'll publish IRL: The Luddite Edition. It's not that we go home to bunny-ear TVs and VCRs, though for a group of journalists trained to calculate pixels per Super AMOLED inch, we're awfully set in our ways. That, and there's nothing like brainstorming IRL ideas to make a grizzled tech editor feel

a little nostalgic. That's the place Darren was in when he dug up his PPC-6700 from 2006 — and Lydia, too, who thinks about ditching Nike+, but won't. As for Billy, he's not wistful; just biding his time until he can replace his Incredible with something he really wants. So how good is good enough for a bunch of tech writers? Keep reading ahead to find out.





The PPC-6700, Unearthed

The year was 2006. The carrier was Alltel. The operating system was Windows Mobile. And honestly, I have no clue what the version number was during that phase of my life. All I knew was that my new job was giving me the opportunity to lay claim to a smartphone, and I couldn't wait to upgrade from that Nokia candybar I'd been using for years before. Picking up the UTStarcom PPC-6700 turned out to be one of the best and worst decisions of my life. Back in those days, unlimited data was but \$20 per month, but the interface was so god-awful that you couldn't make it suck down a webpage if you tried. Perhaps that's why data was practically given away — they knew the hardware

couldn't utilize it.

I fondly recall showing up to work and there being a power outage. So, I sat around for two hours playing Solitaire. And then, the phone died. This brick of a phone wouldn't even last two full hours in use, but somehow, I loved it. It was the future. It was a glimpse of what was to come. But I can't count on every toe and finger to name how many times this thing locked up mid-call, or how many times it froze when I slid the keyboard out. It was truly a terrible, terrible product.

Looking back, the most insane thing about this phone—and Windows Mobile—was that the original iPhone was alive at the same time. Can you imagine what Cupertino's engineers



were thinking during prototyping in 2006, having the iPhone in one hand and its closest “competition” in the other? I actually didn’t own an iPhone until the 3G came out, and I ditched that for a Nexus One not long after. But one thing is abundantly clear: the smartphone — the real smartphone — was born in 2007, and the divide between devices before and after that year is just stunning to peek back on. — *Darren Murph*

Running with Nike+

Humans have long since befriended machines: Fry and Bender, C3PO and the Star Wars crew, Sam Treadwell and his android girlfriend Cherry 2000 — but none of these bonds have been quite as strong as the one between me and the voice of Nike+. My long-term work-

out buddy, this chick gets me through easy runs, hard runs, hot days and cold days, supporting me when no one else will. Okay, fine, I’m not running marathons here, but after one too many unbalanced meals and an early Saturday wake-up call, Nike+ girl never fails to show up.

I began using the OG Nike+ shoe pod and iPod Nano attachment back in 2009. Pulling the insole out of my compatible running shoes, I secured the pod snugly, wondering if I would feel it à la the Princess and the Pea. With the wireless adapter plugged into my third-generation iPod nano, my running companion would track my progress and chime in over whatever one-hit wonder I was using for inspiration.

When I purchased an iPhone two years later, the voice sounded the same, but I

knew she had changed. No longer did she require the shoe pod and iPod adapter, as everything she needed was right there in her swank new iPhone app digs. Although she still cheers me through punishing workouts, Nike+ girl now asks me to sign in with Nike+ credentials, Facebook or Twitter before I can bring the pain. After my workout, she asks if I want to share my times with the world or maybe rate myself with a smiley face or sad face depending on how good or bad my run really was. Since my friendship with the voice has gotten so complicated, I've contemplated switching to the boot camp drill sergeant. Oddly, I always find myself going back to my old friend, even if dealing with her is more of a pain than the actual run.

— Lydia Leavitt

The HTC Incredible: Still Kicking (Mostly)

Yep, I know... most of you would have taken advantage of that pending Verizon upgrade that I have lying around, ditched the Incredible and sprung for a Droid X2 or a Bionic or something. Well, to be honest, friends, I don't need to. I'm rocking the original battery and it still lasts for a full day of "regular" use. The only issue I have appears to be Sense-related. Every once in a while,



HTC's Gingerbread fingerprints go nuts and the home screen gets a mind of its own. The phone is still usable; I just have to manually access apps via the full menu instead of homescreen shortcuts. No huge deal there, as it only happens about once a week or so and lasts just a few minutes.

This was the first time I'd bought into the hype surrounding a phone and purchased it on the day it was released. I definitely don't regret it, as I've been lucky enough to not have major issues like some of my fellow Incredible owners have. Don't worry, though, I'm anxiously biding my time until the Galaxy Nexus finally arrives.

— Billy Steele





REVIEW

LG DoublePlay

For heavy texters, the DoublePlay's keys and second screen are a godsend, though its weight and girth make it a less attractive option than other sliders.

BY MICHAEL GORMAN

It's no secret that Android's dominance of the smartphone world is due in part to the sheer number of models available running the OS. This abundance of choice, while undoubtedly good for consumers, presents a challenge for OEMs as they design and build handsets: how to craft a device that stands

out from the crowd? At this point, we've seen slabs of all sizes, a legion of landscape sliders, and a dual-screen oddity join the Android family. Now, LG has created the DoublePlay, giving users both a hint of the Echo's dual screen experience along with a split physical keyboard for tactile typing. In doing so,



the company has accomplished something we weren't sure was possible by building a unique Android phone. The question is, does this unusual form factor provide an improved user experience, or is it destined to go down in gadget history as a gimmick?

Hardware

Pull the DoublePlay out of its box, and the first thing you notice is its heft. Yours truly carries an HTC Thunderbolt on a regular basis, which at 6.23 ounces (177 grams) is no bantamweight, and LG's new phone is even heavier in hands and pockets, checking in at a stout 6.7 ounces (190 grams). Unsurprisingly, the 4.8 x 2.5 x .63-inch (122 x 63.5 x 16-millimeter) slider's also .09 inches thicker than

our portly daily driver. While the girth is a somewhat forgivable trade-off for a tactile keyboard, we were baffled by the handset's weight — it's constructed largely of plastic, after all. That exterior has a two tone motif: dark pewter polycarbonate rings the Gorilla Glass screen and composes the battery door, while a silver band bisects its profile all the way round. There's also a brushed metal stripe inlaid in the back that rings the phone's 5-megapixel camera and is inscribed with the DoublePlay and LG logos. Along the left edge is a swiveling door that masks a micro USB port, while the volume rocker resides on the right. Up top, you'll find the power / lock button and a 3.5mm headphone jack. It's a largely unremarkable pack-

age, and we had a couple of niggles with its build — there was a visible seam in the plastic at the top left corner, and while the gaps between exterior pieces were pleasantly uniform, both the battery door and the slider had some flex to them when given a squeeze.

Beneath its gray skin beats the same single-core 1GHz Qualcomm MSM8255 Scorpion CPU found in the HTC Radar, and you'll find the usual menagerie of radios found in other T-Mobile devices as well. There's quad-band (850/900/1800/1900 MHz) GSM for world travelers plus UMTS Band I 2100MHz and Band IV 2100/1700 MHz/AWS for use on T-Mo's 21Mbps HSPA+ network, while 802.11b/g/n WiFi, GPS and Bluetooth 3.0 round out the connectivity options. The DoublePlay also has 512MB of RAM and a microSD slot that comes with a paltry 2GB unit preinstalled, so you won't be putting seasons of *Saved by the Bell* in your pocket without springing for a more capacious card.

Call quality was good, whether we were using the cellular radio or WiFi calling app, as voices came through loud and clear. Using the speakerphone wasn't as good an experience, because the mic, according to those on the other end, had some trouble picking up our voice if we were more than a few inches away. We tested the phone in both Maui and Mountain View, California, and found reception was good in both places — though the *faux-G* signal would drop out for seconds at a time on occasion in

Maui before locking back in. We didn't have another T-Mo phone handy to compare, and the issue never popped up in the Bay Area, so we're chalking that one up to gremlins in the island's network. Data speeds were between 3 to 5.5Mbps down (depending on the signal strength) and were right around 1 to 1.5Mbps up everywhere we went.

The DoublePlay's primary display is a 3.5-inch 320 x 480 LCD that provides predictably poor performance in sunlight, but on the upside, it has essentially 180-degree viewing angles on both the x and y axis. Colors only washed out (and just a little bit) if we rotated the phone on an angle between the two. The panel showcases things with somewhat muted hues and a slightly yellowish tint as compared to higher-quality LCDs we've laid eyes on, and with its modest resolution, pixelation is noticeable. Those rough edges become even more apparent when viewing identical icons on both screens — things look much clearer on the 240 x 320 secondary display. In other words, this isn't a screen that sates the cravings of pixel density enthusiasts, nor does it provide the vibrant colors or inky blacks of a Super AMOLED screen.

Slider, Keyboard and Secondary Display

Enough with the hardware undercard, though, it's time for the main event: let's delve into that diminutive 2-inch secondary display and the keyboard surrounding it. Before talking about

those standout features, however, let's address the slider itself. Push the screen upwards — it's easily operated with one hand or two — and halfway, a spring engages to take it the rest of the way, locking into place with a muted *snick*. As we've seen in other sliders, there's some give on the y-axis when it's extended, but the mechanism is otherwise rock solid. Once the display has been nudged northward, the full DoublePlay experience is unleashed.

First off, there's the split keyboard. If you're accustomed to software keyboards (guilty), hardware grids can be a welcome change, and LG's was a joy to use. We don't exactly have massive hands, so the split design accommodated our thumbs quite nicely. The keys themselves, with their domed shape and short throw, provided that pleasant tactile feedback many of us fancy. There was some serious flex to the grid on each side when depressing a central key, but it's really only noticeable when staring at the keyboard — it didn't negatively impact the feel of things while we were typing. We used the physical keyboard more often than not when sending emails and texts, and we found ourselves missing it upon returning to SwiftKey on our Thunderbolt.

Now, between the two sets of keys lies the DoublePlay's other big differentiator, the secondary display, which, as we said before, is a 2-inch panel sporting a 240 x 320 resolution. Because it's got a higher pixel density (187 versus 163ppi) than the main screen, icons

and text look much crisper on the secondary display, though it suffers from the same color reproduction issues of the bigger panel. Pixelation isn't as noticeable, but it's still there.



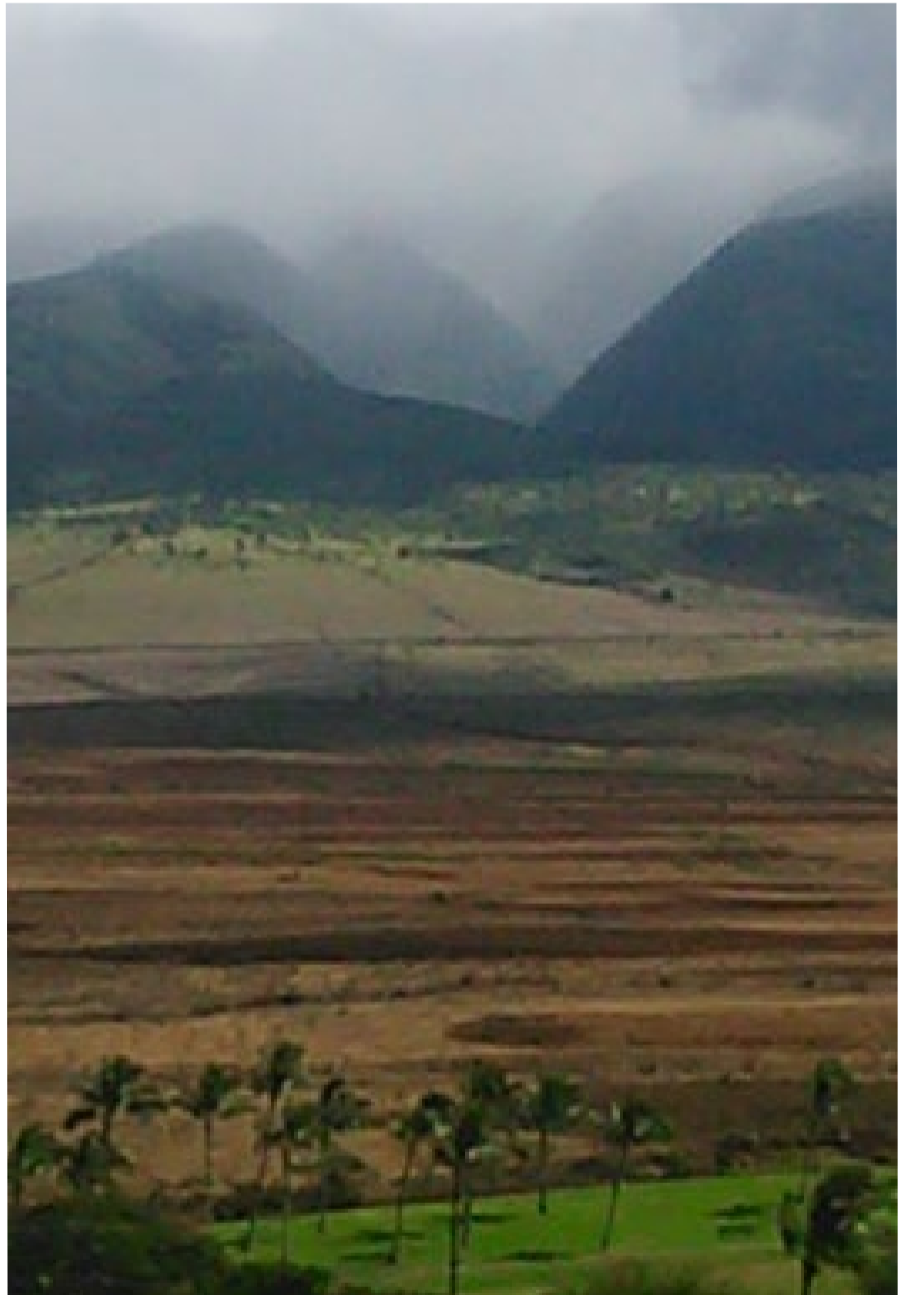
Camera

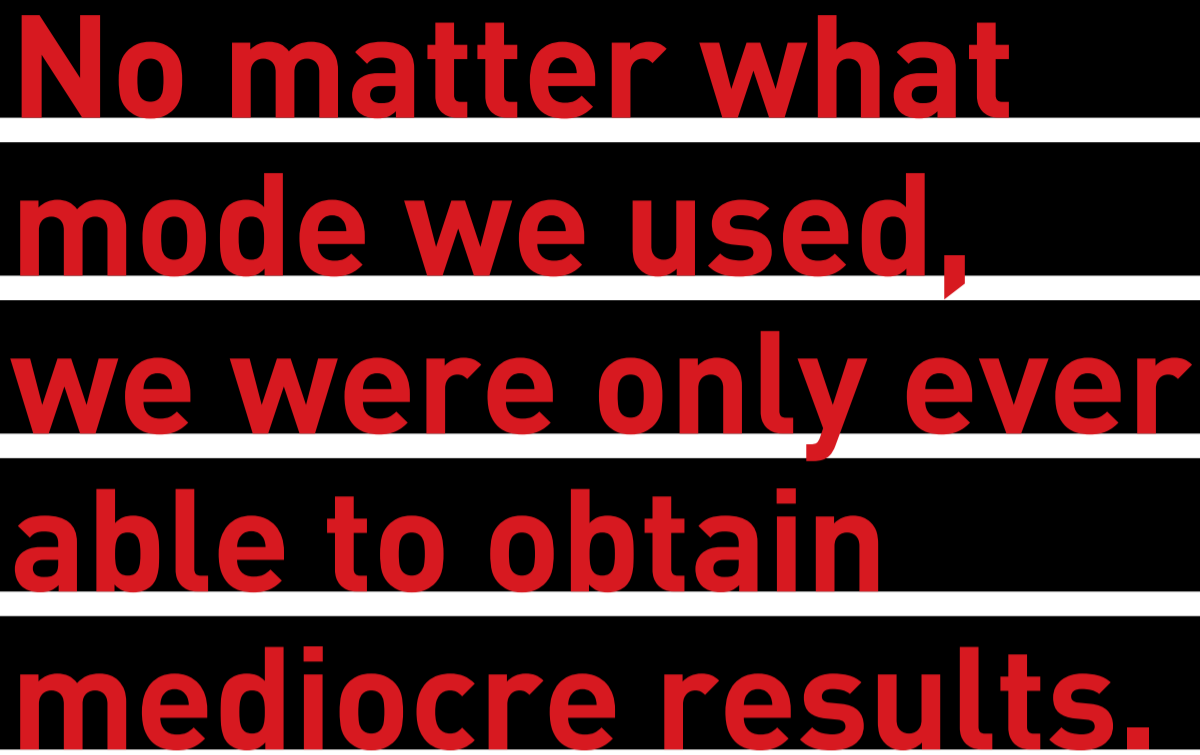
With a five megapixel autofocus shooter onboard, we weren't expecting much from the DoublePlay's camera, and it met our relatively low expectations. Colors were washed out, and pictures were fairly grainy in even the best lighting conditions. Additionally, brightly lit areas wound up looking blown out when composing shots where both shade and sunlight were involved. Low light performance was — as with many phone cameras — poor, with grainy results across the board.

There are plenty of adjustments you can make within the camera app, however. Face tracking and macro modes are included, along with a variety of scene modes, ISO controls (with 400 being the max), five white balance settings plus color effects (like sepia and negative exposure) can be applied as




sample images





No matter what mode we used, we were only ever able to obtain mediocre results.




well. There's a multitude of shooting modes, including useful ones like continuous shot for sequential pictures and panorama mode alongside more whimsical options like smile shot (which triggers the shutter when it detects a smile) and face effect (which creates mosaic and fish-eye photos, among other effects). The myriad options aren't without appeal, but we wish LG had given the DoublePlay a better camera with which to employ them. No matter what mode we used, we were only ever able to obtain mediocre results. We should also mention that the DoublePlay comes without a front-facing camera, which means you won't be video chatting with your friends — a shame considering the phone's second screen could be put to good use in such a scenario.

Many of the features for still shots can

be used when shooting video with the DoublePlay as well. Recordings can be taken in up to 720p, and performance was, as it was taking stills, nothing to shout about. Videos are choppy when shooting moving objects, and results get worse the faster the action gets. Colors, once again, are somewhat pale and washed out, and the camera is slow to adapt when moving from dark objects to lighter ones.

Performance and Battery Life

Speaking of battery life, we got six hours and 40 minutes out of the DoublePlay's 1,500mAh cell using our standard test: looping video with screen brightness at 50 percent, WiFi and GPS on, plus Twitter polling every fifteen minutes and push email enabled. In our real world usage test — making a few calls, check-



BENCHMARK	LG DOUBLEPLAY
SunSpider 0.9.1	3,824ms
Linpack single	36.6 MFLOPS
Linpack multi	33.8 MFLOPS
Nenamark 1	57.1 fps
Nenamark 2	30.1 fps
Neocore	58.9 fps
Quadrant	1,361

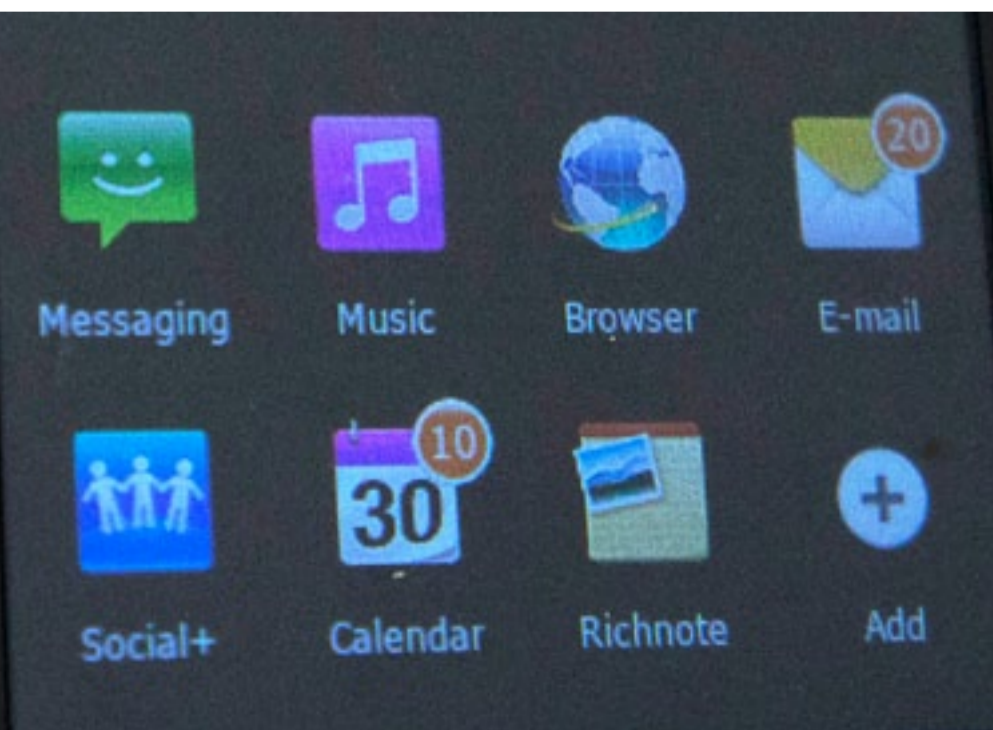
ing email, and some web browsing — we had almost 30 percent of the battery left by the end of our workday. The battery’s endurance is better than say, the 1,400mAh unit in our Thunderbolt (which isn’t saying much), but it isn’t the most miserly phone we’ve used, either. As for benchmarks, well, the DoublePlay doesn’t pack bleeding-edge internals, and the scores above reflect that fact. It even froze up once or twice while we were putting it through its paces.

Despite its modest silicon, and middle-of-the-road benchmarking prowess, we found few faults with the DoublePlay’s daily performance. Web pages load and render quickly enough, with only the occasional hiccup scrolling through content. Similarly, swiping through Android home screens was a smooth experience, and the phone had no problems playing games, music or video.

Software

The LG DoublePlay comes running Android 2.3.4 with Swype’s software keyboard and a plethora of applications preloaded. There’s the usual magenta-clad wares like Bobsled cloud and group texting, T-Mobile TV and visual voice-mail along with a handful of games, including Tetris and Sim City Deluxe. Those games require an additional download to play (and only a demo at that), so at least they don’t take up too much space — a bonus considering they can’t be uninstalled. Speaking of unremovable bloat, the phone comes carrying a bit less of such software than we’ve seen before, a welcome change, to be sure. Aside from the standard Android system applications, T-Mo saw fit to add Slacker, TeleNav GPS, Blio e-reader, DoubleTwist, Polaris Office and Zinio (among others) to the DoublePlay’s memory banks, plus Lookout’s mobile security and backup suite as well.

Among the more useful apps is “Car Home,” which provides direct access to voice search, navigation, contacts,





call log, music and the dialer with large onscreen buttons to make them easy to use while on the road. You can also add custom shortcuts if the preprogrammed apps don't fulfill your Android automotive needs. We found this application quite handy, as it allowed us easier access to the apps we most often use while driving than would have otherwise been possible.

Apps on the secondary screen work in conjunction with the main display. There are nine apps that use it to provide a variety of functions (though oddly enough, there's only room for eight on the screen). Messaging, music, browser, e-mail, social, calendar, Rich-

note, photo and Bobsled group text are the chosen ones, with each app providing varied levels of utility. For example, the browser app gives access to your bookmarks via a vertical carousel of webpage thumbnails, while email gives you a list of inbox messages, the social app lets you scroll through a list of recent tweets and Facebook posts, and the calendar shows what's in store for the day. Emails, posts and webpages open on the primary display, so for those apps, the smaller screen simply serves as a navigation tool. The messaging, music and Richnote note-taking apps are fully functional, however, letting you listen to music, compose notes or send and



receive text messages while surfing the web and using other applications on the main screen. Of course, it's not true multitasking, as apps opened on the big display are paused as soon as you start scrolling through emails or Facebook posts on the smaller one. We should also note that there's some contextual awareness to its operation as well — open the browser on the big screen, and the small screen automatically shows you the carousel of your bookmarks.

In our time with the DoublePlay, we found the second screen most useful as a messaging and note-taking device. It was quite convenient to jot down notes about webpages as we read them and sending and receiving SMS without having to exit our game of Angry Birds was incredibly convenient. Overall, the second screen is a successful addition to the phone, and far from being a gimmick, we found it a handy productivity tool.

Wrap-Up

We must admit: before laying hands on our review unit, we weren't sure whether the DoublePlay's second screen was more marketing ploy or useful feature. After spending some time with the device, however, we can say that it provides some significant utility. The two-inch panel improves the smartphone experience by better enabling Android's quasi-multitasking abilities (in certain apps), but it's by no means a must-have feature. If you have the need for a hardware keyboard, are a messaging maven and crave a handset that

BOTTOMLINE

**T-Mobile
LG DoublePlay**

\$99 on contract


PROS

- Second screen a handy productivity tool
- Split keyboard a pleasure to use
- Excellent viewing angles on both displays

CONS

- Hefty and thick, even for a slider
- Mediocre main screen
- Lacks a front-facing camera

» For heavy texters, the DoublePlay's keys and second screen are a godsend, though its weight and girth make it a less attractive option than other sliders.

stands out from the crowd, the DoublePlay may be just what you're looking for — just know you'll be sacrificing video chat due to the lack of a front-facing camera and you'll pay for the privilege with weighed-down pockets. 

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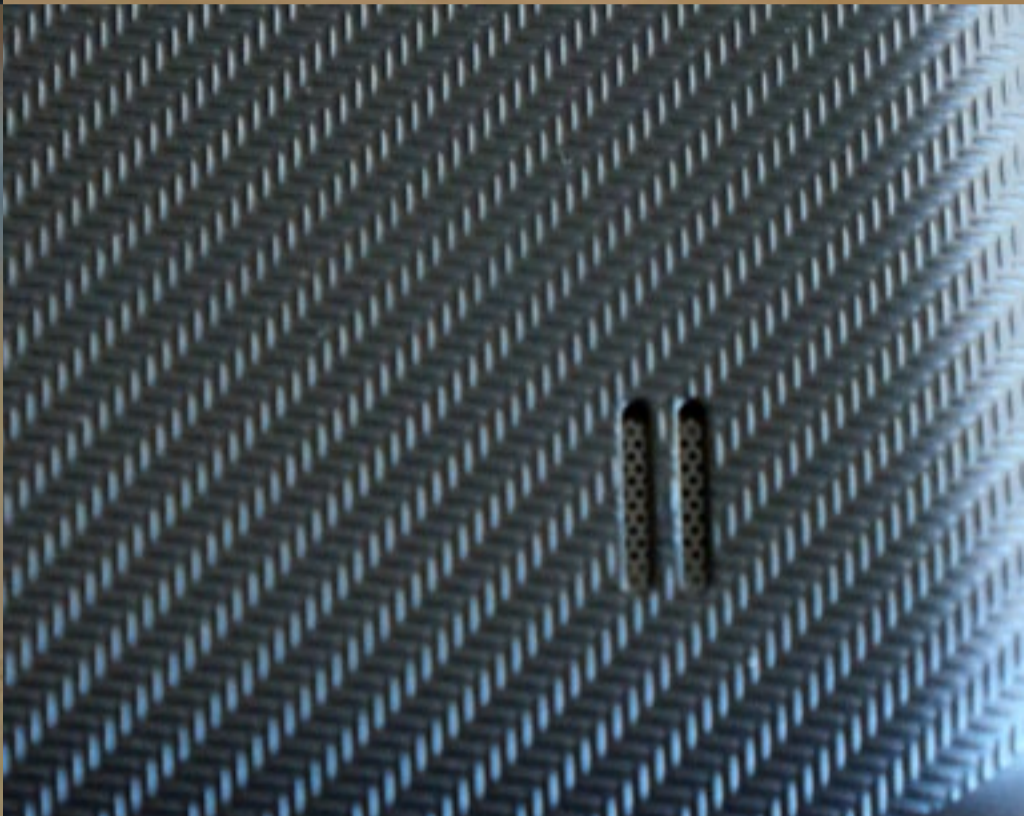
LG Nitro HD

LG's Nitro HD adds more choice for consumers looking to experience 4G LTE on AT&T. It's a solid phone crippled mainly by subpar battery performance.

BY JOSEPH VOLPE

And then there were three. AT&T's lonesome LTE duo — the Samsung GS II Skyrocket and HTC Vivid — just gained a new member with the recent launch of LG's Nitro HD. You may recognize this particular handset from its former life as the Optimus LTE, except here the phone's been rebranded with a moniker

that more astutely conveys its blazing 4G purpose. There may be tough times ahead for the handset, considering the current crop of high-end devices hogging the spotlight. But if three's company, the Galaxy Nexus, HTC Rezound and Droid RAZR are sure to make this a standing room-only crowd — an espe-



cially haughty bunch given their heavy-weight specs. Which is why this sudden end-of-year release for the Nitro HD has us questioning the company's timing. Sure, it's no slouch when stacked up against the competition, with a 4.5-inch 1280 x 720 AH-IPS display, dual-core 1.5GHz Qualcomm APQ8060 processor and 1.3 front-facing / 8 megapixel rear cameras. Yet at \$250 on contract, the Nitro HD needs to outshine the legacy set by its best-in-class Sammy stablemate or, at least, offer a performance boost over the cheaper Vivid. So can

LG's last second contender rise above the fray to win your holiday dollars? Will it succeed in outclassing its LTE comrades? Or is it a case of too little, too late for this *me too three!* smartphone. Follow on as we dive into the mobile nitty gritty.

Hardware

If looks could kill, then this LG phone would put you to sleep. For better or for worse, the Nitro HD's design lacks any striking visual elements. As we noted in our first hands-on with the device,



it's characterless; the Jan to the Galaxy S II's Marcia. And that specific allusion isn't just for kicks either — it appears LG's lifted a page from that category titan's use of textured backing, making this plain jane wannabe as delightfully nimble in the hand (though nowhere near as good looking). Measuring in at 5.27 x 2.67 x 0.41 inches (133.9 x 67.8 x 10.4mm), it's 0.04 inches thicker than its LTE stablemate the Skyrocket and just 0.1 ounces lighter at 4.5 ounces (128 grams). It's not so light as to give off the impression of cheapness and that speaks to the phone's solid build. You won't find any of the squeaks and creaks typically associated with plastic casings, no matter how tightly you clasp it.

Despite cutting an unimpressive figure, it actually feels great to hold. Whereas the Titan and Amaze 4G have screens that stick out from their unibody casing and dig into your palm, the Nitro HD's glass surface smoothly tapers into the curved edges, lending itself to a comfortable grip. LG's largely avoided any sharp ends in the phone's construction and the only bit of necessary design roughness you'll encounter comes in the form of its diagonally grooved plastic back, which keeps the ultralight device from sliding out of hand. There seems to be a deliberate absence of extraneous branding mucking up the staid posterior, as any mention of Google or even AT&T's 4G LTE are nowhere to be found. All that breaks up the backside is the device's eight megapixel camera with LED flash ensconced in a rect-



angular strip of brushed metal, LG's winking logo directly beneath it and two small slits on the lower right which house the speaker. Pop this casing off and you'll come face to face with both a 16GB microSD (complemented by 4GB of internal storage) and SIM card accessible without having to remove the 1,830mAh battery powering this juice-sucking device.

The Nitro HD's entire right side remains unblemished by ports or dedicated keys, leaving the majority of functional flourishes to reside up top. There you'll find an MHL port (concealed by a flimsy door) that supports micro-USB and HDMI (via an optional adapter),

as well as a secondary mic centered between the 3.5mm headphone jack and power button. Over on the left of the device, the volume rocker lies just slightly askew of the middle with the main mic hidden in a notch at the phone's base. It's here at the bottom of the screen that you'll notice LG's unique capacitive layout for Android, a soft button schema that shrinks the usual array down from four to three, conjoining both menu and search into one shortcut. A simple tap on this combined icon will trigger menu settings, while a long press activates search functionality.

As is the case with most AT&T phones,



the carrier's logo shines out prominently from atop the screen, sharing the excess of bezel with the phone's 1.3 megapixel front-facing camera and the earpiece above. So far, so average, but all of this underwhelming design takes a drastic turn towards remarkable once this 4.5-incher comes to life. LG's chosen to outfit the Nitro HD with a 1280 x 720 AH-IPS panel boasting 329ppi that bests Apple's Retina display... and it shows. The screen is simply gorgeous, rendering fonts and icons with a smooth distinction you'll likely take for granted. Colors are vibrant and accurate, sidestepping the over-saturated pizzazz typical of rival Super AMOLED tech for a more restrained performance. True, the blacks aren't as deep as what you'd find on a Galaxy S device and you will have to pump up the brightness considerably for readability out in bright sunlight, but make no mistake, this is a top-notch screen with excellent viewing angles. The only glaring flaw is the hit or miss touch sensitivity. In certain instances, it took us more than a few hard taps to jolt the screen into responsiveness.

Performance and Battery Life

AT&T's three LTE mobile amigos not only have a 700MHz radio in common, they all boast an identical processor — Qualcomm's dual-core APQ8060, a Snapdragon S3 clocked to 1.5GHz and paired with 1GB RAM. Of the trio, the Vivid is the sole "slowpoke" coming in at a lower 1.2GHz and consistently trailed in our testing. Excluding HTC's

BENCHMARK	LG NITRO HD	HTC VIVID	SAMSUNG GALAXY S II SKYROCKET
Quadrant ¹	2,616	2,005	3,334
Linpack Single-thread ¹ (MFLOPS)	51.1	44.9	50.6
Linpack Multi-thread ¹ (MFLOPS)	81.8	38.9	77.4
Vellamo ¹	1156	893	815
Nenamark1 ¹ (fps)	56.1	43.7	59.8
Nenamark2 ¹ (fps)	37.2	30.1	54.1
Neocore ¹ (fps)	59.8	58.3	57.7
SunSpider 0.9.1 ² (ms)	2,687	4,540	3,115

¹ Higher the score the better.

² Lower the score the better.

underperforming clunker, the Nitro HD notched a narrow victory over the GS II Skyrocket. LG's handset came out on top in Linpack (single and multi-thread), Vellamo, Neocore and SunSpider 0.9.1, while Sammy's LTE redux claimed top marks in Quadrant and Nenamark (1 and 2).

For all its performance might, the Nitro HD should be the phone to garner your LTE affections, but a glimpse into its greedy power consumption might give you pause. After running our formal battery rundown test, the handset gave in at the four-and-a-half-hour mark — an exceptionally unacceptable result given its 1,830mAh battery and the equally priced Skyrocket's nine and a half hours. In real-world usage, we managed to bump this paltry charge to a more serviceable seven hours — that's with Twitter syncing at 15 minute inter-

vals, one push email account, brightness set to 50 percent, as well as GPS and WiFi enabled. We should also note that the Nitro HD fluctuated between LTE and HSPA+ in our time testing it around New York City, so LTE is partly to blame for that excessive battery drain.

Network Speeds

When LG launched the Nitro HD, we were surprised to see AT&T's 4G LTE icon appear in the notification bar. At the time, we immediately ran a few speedtests to get a sense of the network's preliminary performance. The end result was a max of 13.81Mbps down, a number more in line with its HSPA+ 21 radio and nothing like the numbers we'd previously seen in Boston. Subsequent testing around Manhattan not only showed an available (if scattered signal), but also delivered



the kind of mind-boggling speeds we enjoyed on the Vivid. Signal strength varied from neighborhood to neighborhood, switching from LTE to HSPA+. Speeds topped out at 40.08Mbps down and 14.45Mbps up, averaging between 18Mbps to 33Mbps down and 9Mbps to 13Mbps up. We can't guarantee that you'll necessarily experience this same performance should you purchase either the Nitro HD or one of the carrier's other 700MHz capable phones, as increased adoption of the service will inevitably give way to network congestion. Still, if you decide to take the plunge, enjoy the robust radio waves while you can. Of course, AT&T's readily available HSPA+

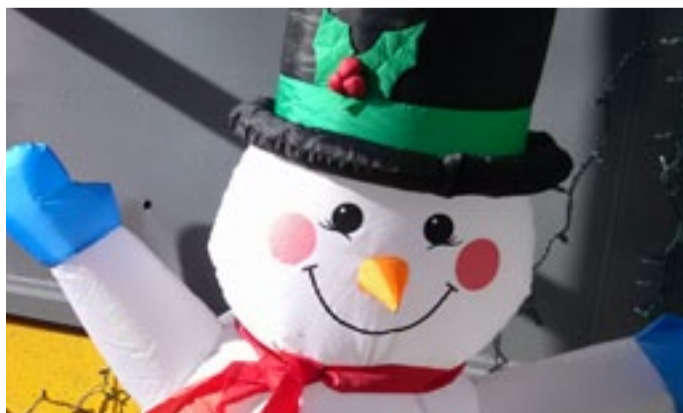
network is a more than adequate default for your everyday data demands and, as evinced by the results above, should regularly deliver speeds between 7Mbps to 14Mbps down and 1Mbps to 10Mbps up in New York City.

Camera

You won't find much fault with the Nitro HD's eight megapixel rear camera. The module, aided by an LED flash, is fantastic at capturing imagery when drenched in a healthy amount of natural light, demonstrating sharp contrast and an extended depth of field. Similarly, when zooming in on an object, the camera was able to maintain an integrity of detail



sample images



that only faltered when lighting conditions were less than optimal. We struggled a bit with the sensor's auto-focus and found a manual tap-to-adjust was often necessary, but again, most of our gripes took place in dimly lit environs.

LG's native camera software allows for the standard selection of scene and shot modes, ranging from normal to landscape to panorama, though macro is curiously missing. We were surprised to see colors reproduced with an inherent muteness, even ones taken in strong sunlight. It's primarily the camera's nighttime performance that reveals its underlying weakness. In all circumstances where we lacked an exterior source of light, the Nitro HD's camera failed to accurately focus, forcing us to snap a handful of shots where one would normally do. LG's LTE darling won't be replacing your need for a DSLR anytime soon, but as a point-and-shoot substitute, it should more than suffice.

Still shots taken with the camera may yield uneven results, but, thankfully, the same cannot be said for video capture. The Nitro HD is capable of full 1080p, recording scenes in exceptionally crisp detail without a loss in frame rate. Audio recording also held up remarkably well, surrounded as we were by noisy city traffic.

Software

The Nitro HD zips along mostly free of the kind of memory-intensive skins included on other Android phones (we're looking at you, Sense). Naviga-

tion through the homescreens feels fluid as the phone is devoid of any fancy 3D animations. LG's UX is relatively unfussy and allows for a deep level of user customization, such as the ability to change the font, select a background color for widgets and optimize the resolution of market apps. Long pressing on any of the seven homescreens brings up a gridded overlay and menu options for widgets, shortcuts, folders and wallpapers. If you're not keen on the multitude of pre-set homescreens, you can easily remedy that by deleting them. An occasional delay is evident when accessing the app drawer, but thankfully that performance hiccup ends there, as applications launch with a delightful immediacy.

You're probably bracing yourself for the inevitable and wondering just how much bloat both AT&T and LG shoveled onto the Nitro HD. Well, you can breathe a sigh of relief. Not only does the device come pre-loaded with a scant amount of crapware, but it's also uninstalleable — a commendable feature that should prove to be a major selling point for many Android users. So, carrier-branded apps like AT&T Code Scanner, FamilyMap, Live TV and Navigator, in addition to Amazon Kindle and MOG Music can be quickly out of sight and out of mind (also, memory) should an uncluttered app drawer tickle your fancy. There's also a separate division for downloaded applications and the ability to pinch to close or open both folders. Now for the bad news: LG's decided to



bake Carrier IQ into the handset, as we noted in our hands-on. So, fans of privacy should direct their attention and dollars elsewhere for now, or at least until the company provides users with a way to disable the software.

LG's opted to run the Nitro HD on the same old Gingerbread OS we've come to know and love over the past year, so don't expect any major UI tweaks on par with Ice Cream Sandwich's evolution. Speaking of which, LG's keeping mum

on plans for a software update, saying only to stay tuned for an announcement this month. In the meantime, you'll just have to be content with the skinned version of 2.3.5 that ships out of the box.

Browser performance on the device was refreshingly brisk when in reach of LTE, rendering flash-heavy pages in full desktop mode within ten seconds. That brevity takes an understandable hit when the network defaults back to HSPA+, as we've seen load times over 30 seconds. Pinch to zoom exhibits minor jag, but the full site remains onscreen, scaling in and out in step with your gestures.

Wrap-Up

Make no mistake about it: mobile users eager to experience the world from Android's apogee should look no further than the Galaxy Nexus. That Ice Cream Sandwich flagship is, bar none, the best Googlefied smartphone you can buy right now. When stacked side-by-side with the Nitro HD, it's clear Sammy's motherphone is the most deserving of your disposable income. Restrict that playing field down a tier to AT&T's LTE offerings and maybe, just *maybe*, a compelling argument could be made for LG's featherweight handset. The Nitro HD certainly lords over its competition in benchmarks, weight and the quality of its AH-IPS display, yet in everyday usage still falls short of the zippy Skyrocket. But for all of its spec wins, there's no overlooking the device's greedy power consumption — a middling seven hour

BOTTOMLINE

**AT&T
LG Nitro HD**

\$250 on contract


PROS

- Stunning AH-IPS display
- Lightweight build
- Blazing LTE / HSPA+ 21 Mbps speeds

CONS

- Poor battery life
- Uninspiring design
- Occasional performance hiccups

» LG's Nitro HD adds more choice for consumers looking to experience 4G LTE on AT&T. It's a solid phone crippled mainly by subpar battery performance.

endurance that only the most casual of users wouldn't be affected by. Add to that a \$250 two-year on contract price that's identical to the longer-lasting Galaxy S II Skyrocket's and, again, the scales tip in favor of Samsung. Unfortunately, LG's late bloomer falls prey to a heavy case of "Marcia, Marcia, Marcia" envy, and we're sorry to report it's entirely justified. 

Joseph Volpe is ambiguously ethnic. He is also an Associate Editor at Engadget.

* *EXCLUSIVE* *

Two Days in the Desert with Apple's Lost Founder

By Brian Heater

Photography by Brian Heater

“I have to ask you something,” Ron Wayne begins, as we stand to leave his office, signaling the close of our day-long conversation. He takes a slightly dramatic pause, adding, “compared to other people, is my life really that interesting?” This isn’t modesty, this is earnestness. Wayne is genuinely curious about what makes his 77 years on earth so fascinating to have warranted my traveling across the country in order to spend a few days in his presence. I answer, honestly, that it’s his time with Apple that has made him such a figure of interest. “Oh,” he responds. “So it’s my brushes with famous people. I’m a footnote in someone else’s story.”





Thirty-five years ago, Ronald G. Wayne helped co-found the Apple Computer Company with two men 20 years his junior: Steve Jobs and Steve Wozniak, names that have since become synonymous with the personal computer revolution of the early 80s. For Wayne, however, it was a gig that lasted all of a dozen days, abruptly ending when he marched down to the Santa Clara County Registry Office to have himself stricken from the contract he'd authored. His is a name that pops up every few years or so, shrouded in mystery, the "forgotten" or "unknown" founder of one of the world's most successful companies – and perhaps more infamously, the man who once owned 10 percent of its stock, only to walk away from it all a mere \$2,300 richer.

Wayne stands in his bedroom in Pahrump, NV, showing off a prized member of his antique firearm collection.

Wayne's name has popped up in the national news two separate times in recent months, first with the passing of Steve Jobs, which found him appearing on countless TV news programs across the world, discussing the global impact of his one-time business partner, and then with the well-timed appearance of an original Apple contract, dated April Fool's Day, 1976, signed by Jobs, Wozniak and Wayne, which fetched a staggering \$1.6 million at auction – roughly 1,000 times the amount Wayne received to forfeit all claims to the company. The two Steves' signatures are downright childlike, compared to Wayne's barely



legible scribbles – fitting, perhaps, given the then 41-year-old’s role as the adult supervision for the company’s other two fresh-faced founders.

Three decades later, Wayne ended up here in Pahrump, NV, an unincorporated

town roughly 60 miles outside of Las Vegas, a vacation destination for gamblers, when the vice-fueled human gridlock of the Strip or even Reno prove too much to handle. The folks who actually plant their roots here are, more often than not, the sorts who’ve made a conscious decision to go “beyond the beyond,” in Wayne’s words, in a wild west outpost of sorts, a desert hideaway relatively free from the intrusive arms of an overbearing government.

You’ll find Pahrump down US Route 160, which shrinks down to two lanes before winding across a red-rocked snowy mountain pass. Beyond that admittedly scenic bit of landscape, the 90-minute drive offers little more than miles of brush and yucca plants, sharp and solitary desert foliage that belong, perhaps, in the background of some Roadrunner cartoon. The occasional sign warns drivers to be on the lookout for stray horses, burros, cattle and landslides, and a wooden cutout of Smokey the Bear lists the day’s fire warning (mild on this particular 30-degree day in early December).

Beyond the mountain, the land flattens into the great expanse of the Nye valley, bordered by a range of peaks on either



At the edge of town sits a giant, white plaster castle, a combination “gentleman’s club” and massage parlor. Hang a left here, and you’ll find yourself on Homestead, a long country road where men in beards and cowboy hats do controlled burns of brush in their front yards.

side, a landscape that chugs along without the slightest indication of human progress, until Pahrump materializes beyond the horizon. It’s a desert oasis with a surprisingly massive sprawl; 34,000 people spread out over nearly 400 square miles – these are, after all, people who value space nearly as much as their privacy. Ten minutes outside of town, the onslaught of billboards begins, advertising \$10 steaks, strip clubs and fireworks emporiums.

The town’s motto positions it as “your base camp to adventure,” a transitory sense of adventure by proximity no

doubt shared by the scores of teenagers growing up in a town where a visit to the nearest movie theater means an hour-and-a-half-long drive into Vegas. There is a bowling alley located deep within one of the local casinos, but, otherwise, the local high school students are generally out of luck in an entertainment scene tailored exclusively toward the 21-and-up crowd.

At the edge of town sits a giant, white plaster castle, a combination “gentleman’s club” and massage parlor. Hang a left there, and you’ll find yourself on Homestead, a long country road where



men in beards and cowboy hats do controlled burns of brush in their front yards. The road ends a few miles out, dissolving into desert. Sheri's Ranch and the Chicken Ranch, sit where the desert meets the edge of the road, neighboring brothels, the latter of which proudly served as the inspiration for 1982's *The Best Little Whorehouse in Texas* when it was located a few states to the east.

Paranormal radio host and world class conspiracy theorist Art Bell also calls the area home, setting up camp amongst a sea of giant antennas, which dot the landscape like a metallic forest. This is the "Land of Nye" he referenced ominously at the top of every episode, having gone so far off the grid that even his replacement host, George Noory,

reportedly has trouble contacting him.

It's 160 that serves as the town's main drag, for a few minutes' drive, before filtering out again into the empty desert expanse. The street is lined with the town's three major casinos: Saddle West, the Pahrump Nugget and Terrible's – western themed; all of them. If any single entity runs this community, it may be the latter, its name shared with another sizable casino and a gas station at the edge of town.

The street is also home to a number of chain stores – a Radioshack, Home Depot, several fast food joints and a 24-hour Walmart, which seem to have decimated a good deal of the local businesses, serving as the current center of commerce for the city. A few mom-



Heater, I presume.” He’s dressed sharply, with wire-rimmed glasses and a suit jacket over a v-neck sleeveless sweater, a large 70s-style collar jutting out over both. He’ll wear this same outfit both days, a quiet reminder of his former co-worker’s fascination with the concept of a consistent daily uniform. His white hair is brushed back, thin on the top and long in the back. He’s in excellent spirits, that much is clear. And like that, as he puts it, “we’re off like a pack of turtles.”

I follow Wayne out to his car, a 2002 Chevy Malibu – the same year he left Florida and packed up for Nevada.

and-pops do seem to be thriving along the stretch, however, like the Pahrump Adult Superstore (which is roughly the size of a department store) and a number of fireworks emporiums, which seem to outnumber supermarkets in the town.

I meet Ron Wayne my first morning in town. He’s waiting for me in the lobby of my hotel, a small man sinking into a leather couch, largely obscured by the newspaper he’s reading. I greet him and he stands to shake my hand, “Mr.

The car has served him well, he explains. He’s driven it across the country several times. There are a number of stickers lining the rear passenger window, including a small rainbow Apple logo.

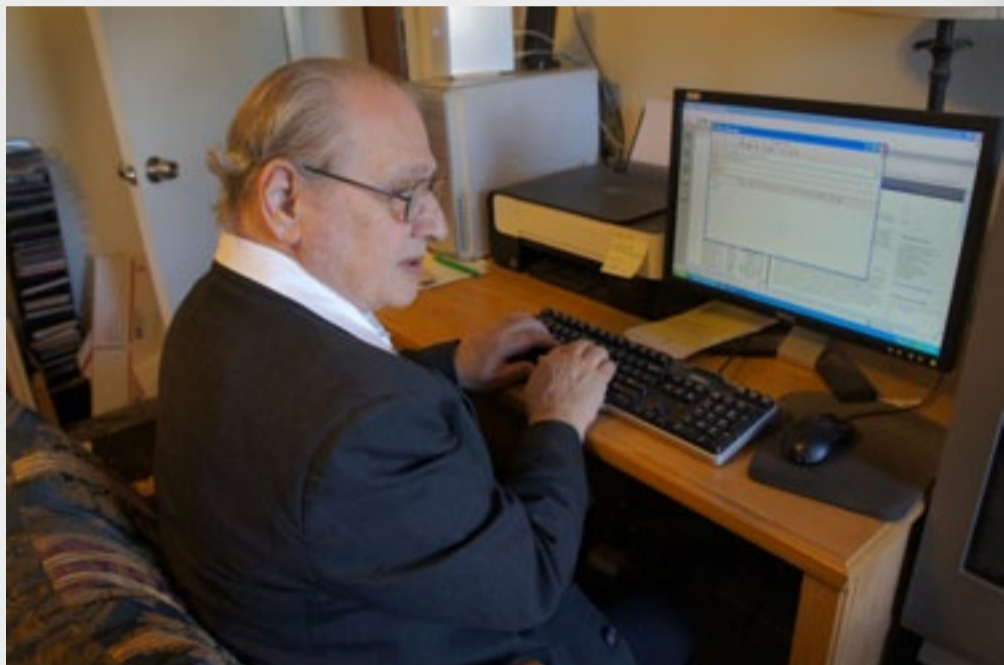
There’s not much in the way of small talk as we drive to breakfast. Wayne instead launches almost immediately into his current passion: economics. It’s a subject that has fascinated him for his entire adult life, culminating with this year’s publication of *Insolence of Office*.

“If I have one legacy,” he offers up as we exit the Malibu and walk toward the Pahrump Nugget in the cold Nevada morning air, “I hope it’s that book.”

Over the course of our two days together, we’ll eat all of our meals at two different casinos – the Saddle West and the Nugget. Pahrump isn’t much on fine dining. There’s a steak house in the Nugget, a few coffee houses and a handful of Mexican restaurants, but, otherwise, the majority of the dining establishments in the town involve heating lamps and / or the word “buffet.” Today we wind up at the Saddle West for breakfast, after our first choice proves surprisingly hopping on a Tuesday morning.

Wayne gets eggs and sausage from an exposed steam tray and jokes about his cardiologist’s reaction, picking up where he left off in the discussion of global economics. It’s a subject that truly requires Wayne to start from the beginning, tracing matters from the barter system to the advent of paper money, the abandonment of the gold standard and the pending global economic collapse. Wayne’s history with the subject began around his 20th year, a fascination he chalks up to growing up a child of a single mother in Cleveland during the Great Depression.

All roads lead to a single conclusion for Wayne: the necessity of investing in precious metals. It’s a lesson he’s actively attempting to impart on me and one he shared with a young Steve Jobs, who promptly sold his investment, once the value went up. “I’m not



Up top, Wayne flips through one of his old patents. Below, he composes an email on his Dell Windows XP desktop.

sure he entirely understood what I was trying to tell him,” Wayne explains. Gold and silver aren’t an investment for Wayne – they’re security, a protection from a time in the future when the uselessness of non-metal-backed paper money becomes too apparent to ignore; when China does something to address the US’ massive debt.

These are subjects tackled by *Inso-
lence of Office*, a 260-page treatise on shielding oneself from the impending economic and societal collapse, featuring chapters with titles like, “The End of the Republic,” “Morality and Sexual



Preference” and “Illegal Destruction of Fixed Currencies in the United States.” The book opens with a rhetorical question: “I wonder how many of us would have accepted the gift of life, if we’d first taken the trouble to read the fine print.” It’s a question that could, perhaps, be applied to Wayne’s own roller-coaster-like existence.

Insolence was published earlier this year by 512k Entertainment, the company behind Wayne’s recent autobiography. Its founders first approached Wayne to be interviewed in their 2009 documentary, *Welcome to Macintosh*, an appearance he agreed to make with one major caveat: that they read his magnum opus and consider the possibility of using it as the basis for their next film. The manuscript, however, was too dry for such things, according to Wayne. Eventually, though, another mutually beneficial deal was struck between the two parties, with 512k agreeing to publish *Insolence*, if Wayne agreed to write an autobiography for the company.

The result was *Adventures of an Apple Founder* – the title, Wayne happily confesses, was his own, an attempt to capi-

Wayne goes hands-on with my MacBook Air and iPhone 4. He was recently given an iPad — his first Apple product.

talize on an increased interest in recent years regarding his brief role with the company. In spite of such titles, however, the book only devotes roughly a dozen or so pages to exploring Wayne’s role with Apple, spending far more time on subjects like his time at Atari – the place where he was working when he first encountered a young Wozniak and Jobs. It also delves a fair amount into his lifelong interest in the world of slot machines, a key aspect of Wayne’s life seemingly at odds with the value he places on money and a large part of the reason he wound up here in Pahrump.

For his part, Wozniak graciously wrote the forward to *Adventures* – something Jobs outright refused to participate in, telling Wayne, bluntly, “I don’t think you’re a founder of the company,” in an email – it was their first communication since 2000, and it would ultimately prove to be their last.

“[Wozniak] was extremely generous in that writing in terms of what he regarded



“I always tell people that if you had to choose between Steve Jobs and an ice cube, you’d stand next to the ice cube for warmth.”

as my contribution to the front end of the thing,” Wayne explains, taking a break from his plate of scrambled eggs. “It was much more so than I ever considered myself. I regard Steve Wozniak as, not only a whimsical character — he’s a delightful person to know and be with — but as one of the most gracious men I’ve ever met in my life. I remember when this meeting occurred at the Macworld Convention in San Francisco, there he was and from across the room he greets me like a long lost brother.”

As for Jobs’ personality, Wayne is similarly candid, saying with a smile, “I always tell people that if you had to choose between Steve Jobs and an ice cube, you’d stand next to the ice cube for warmth.”

Wayne regards the fascination surrounding his time at Apple with simi-

lar amusement. “Every couple of years or so, somebody will suddenly wake up and say ‘Oh, Mr. Wayne, let’s find out about him,’” he explains. “And of course every time anything significant happens with the Apple Corporation, here come guys after the ‘unknown founder.’ To me it’s a mystery. I really believe I will probably wind up as a footnote in history because I happened to have known someone. The reality is that I was a co-founder with Steve Wozniak and Steve Jobs of the Apple Computer Company. I had absolutely nothing to do with the corporation that followed.”

Wayne traces such interest back to 1994’s *The Mac Bathroom Reader*, a curious little book of Apple trivia with a cover featuring a rubber ducky and a roll of toilet paper. The book’s author, Owen Linzmayer, happily cast Wayne

as the “forgotten founder,” borrowing that phrase for the first chapter of 1999’s *Apple Confidential*.

Our conversation is interrupted by an older gentleman, who stops by to shake Wayne’s hand. He explains the situation to the man with a customary sense of humility and levity, as though he’s still not entirely sure why I have ventured this far to talk to him. The man shakes my hand as well and is on his way. He’s a fellow hobbyist, Wayne explains, a buyer of coins.

In spite of having lived in Pahrump since 2002, Wayne doesn’t really know all that many people around town. His social engagements are largely limited to clients and a poetry club that meets for two hours the first Saturday of every month at the Pahrump Library, where Wayne indulges the group with one of a number of his creative hobbies, including his most ambitious work, *Grecian Treasure*. The mystery story is comprised of 26 sonnets, opening, “On damp, dark streets of London’s night, a lonely click of footsteps sound, attendant to a common sight... an average man, now homeward bound.”

Wayne freely admits that he leaves his house as seldom as possible, a fact that has gone a ways toward furthering this perception of him as a mysterious figure in Apple’s history. It’s also, apparently, given him an air of mystery around Pahrump. When I pop into a small, newly opened computer store a few days later, I ask the owners if they know Wayne. “Ron Wayne?” one asks.

Is he a local politician?”

“No,” I answer. “He’s one of three co-founders of Apple. And he lives here in Pahrump.”

“Oh,” responds the other, “he was on the local news recently, after Steve Jobs died. He’s a bit of a recluse.”

Wayne chalks his sedentary nature up, at least in part, to the fact that he works from home, making himself available to clients who call his house throughout the day, hoping to swing by to make a deal. Wayne deals in coins and stamps, a hobby of sorts that supplements his Social Security checks, in this state of semi-retirement. At one point, the hobby was a full-time business, in the form of a shop in Milpitas, California, but Wayne prefers the low overheads of his current setup, a home-field advantage that lands him in the proverbial “catbird seat,” as he puts it.

He’s come across the majority of his fellow traders by way of a now-defunct swap meet in the area or two small, text-only ads in the back of the local *Nifty Nickel* – “Buying old stamp collections, US & World, pre-1950 also coins, coin collections & unused bulk postage,” reads one, in part, measuring roughly an inch across.

Having significantly overstayed our welcome, we jump back in the Malibu and are once again off like the proverbial “pack of turtles.” It’s a bit of a drive to Wayne’s house. “You need a car to live here,” he tells me, adding, “though you see more and more people on bicycles, these days. I think you’re going to see



more and more of them in the future. We're headed toward dark times.”

Like many in the area, Wayne's house is of the small, pre-fabricated variety. It's covered in blue vinyl siding, with a small adjacent garage, which Wayne converted into a workspace, when his adopted family moved in with him. Two large carports sit out in front, protecting their vehicles from the oppressive desert sun. Out back, another mobile home and a trailer form a triangle with a small plastic swing set and a lawn of yellowed grass in the middle, a casualty of the poor desert soil, where not a whole lot of anything grows naturally.

Two dogs bark furiously behind an iron gate – Mica, a large black mixed breed and Hercules, a fierce little Chihuahua

Ron Wayne's front yard in Pahrump, NV.

with a Napoleon complex that needs to be locked up in a bedroom when strange reporters come to town. There are five dogs in all living at the house, according to Wayne's estimate – though he can't be entirely sure that the number is correct. They are “beloved pets,” according to Wayne, but they'll certainly give a start to strange reporters or anyone else who might approach the home.

Make it past the over-excited pack of dogs, and you'll be greeted by a Jennings Star Chief, a vintage quarter machine with a big brass Indian head sitting above the coin hopper. It's an immediate reminder of one of Wayne's other passions: slot machines, a long time



love that certainly played a role in his decision to relocate to Nevada. He settled into the industry after a stint working at the Lawrence Livermore Labs and a number of shop jobs. The questionable business practices he encountered working in that industry earlier in life also played a part in his decision to walk away from Jobs and Wozniak early on.

As with most other subjects, Wayne starts at the very beginning when describing what precisely drew him to the machines in the first place. “They have a character to them,” he explains. “They have a history to them going all the way back to Charlie Fey in San Francisco in 1895, selling bar supplies, and in his garage, he tinkers together

the first slot machine. The mechanics of it, the mathematics of it, the symbolization that he had mastery of that fascinated me.”

It’s a sort of mastery Wayne sees as having been drained out of most mechanical fields — where areas like the automotive industry moved toward electronic specialization, slot machines afforded the opportunity for that sort of mastery over a product; the ability to build something from the ground up. But as with so many other areas, the world of slots left Wayne behind. The machines have since moved to what he’s deemed a “paper in, paper out” system, printing out slips with small amounts of money, instead of the tangible coin drop — a not so subtle reminder, perhaps, of his larger concern with a society-wide move toward paper currency.

Manufacturers also moved toward microprocessors as a way of beefing up security, deeming the more traditional machines too easy to manipulate. “All they did was shifted the realm of theft. Instead of someone coming in and cheating the machine for twenty or thirty bucks they’ve got guys who come in and cheat the machine for ten million dollars,” Wayne tells me. “The level of theft has gone up and become more sophisticated.”

The move toward more sophisticated electronics has also made it easier for the casinos themselves to game the system. “It’s bad enough when a game of spinning reels isn’t being decided by the random stop of the reels but is being

... A close study, he's spent decades wandering casinos, looking for patterns, recognizing and taking advantage of attract modes designed to draw overzealous gamers to machines.

decided instead by an electronic set of reels that are telling the reels where to stop," Wayne explains with a fair amount of passion. "It's worse when you are looking at a 20-stop mechanical wheel being driven by a 256-stop electronic reel and you think you're playing against 8,000-to-one odds and you're playing against 16,000,000-to-one odds."

Though such unevening of odds has, over the years, afforded Wayne the opportunity to turn the tables from time to time. "I was packed up and leaving [a Las Vegas hotel] and right next to the register they had this bank of these

Twenty-One machines," he says, beginning what is clearly a favorite anecdote. "So I went up to the first machine and loaded it full, played it and won. I won about five or six hands, the first hand I lost. I go on to the next machine and did exactly the same thing, I went right down the row. I looked like Captain Kangaroo as I was going out the door with my pockets full of quarters. That was one instance when I had recognized what was going on."

Wayne is full of such stories, a close study, he's spent decades wandering casinos, looking for patterns, recog-



nizing and taking advantage of attract modes designed to draw overzealous gamers to machines. He still frequents a local casino a few times each week, a rare regular excursion from the familiar scenery of his home / office, finding himself in the dimly lit confines of the Mountain View, a small casino far from the relatively fast pace of the highway 160 casinos, between 11:30PM and 2AM. He hits the Kenny Rogers Gambler and Cleopatra, machines with decent payouts, both.

The man so preoccupied with global economics has no illusions that he'll get rich from such activities, instead writing the whole thing off as an amusing diversion, heading home for the night when he hits his self-imposed limit. It's

a significant act, he insists, which separates him from the more compulsive sort. Wayne still entertains fantasies about getting back into the other side of the business, however, including a prototype for a machine he says he came close to selling to the Terrible's chain, before financial concerns intervened.

On the side of his main room opposite the Star Chief sits a large tube radio, roughly three feet high. Wayne walks over to the beautifully restored piece and fiddles with the knobs for a few minutes, ultimately unable to get any kind of signal, in spite of the large mesh antenna he had built for the system. On top of a small bookcase is a small model, a remnant of a large replica he built of the Nautilus from 1954's Disney adapta-



tion of *20,000 Leagues Under the Sea*, using video shot from television, played back on a reel-to-reel machine as reference. Wayne considered the whole project something of a psychological rehabilitation from an unfortunate work experience, just ahead of starting his gig at Atari. Wayne built the sub with assorted pieces from tank sets and dollhouses, amongst other things, with a near obsessive level of detail paid, right down to the lighting and the gilded ceilings, created by painting doilies.

Along the wall in the connected dining room is a large shelf stocked with rows

and rows of VHS tapes, each featuring a cryptic numbering system – it's all part of a cataloging system Wayne developed, with binders detailing the corresponding classic movies recorded off of TV onto each tape. He's also cataloged clips from the *Rachel Maddow Show* and *Countdown*, before Keith Olbermann jumped ship to *Current*. He's particularly taken with Maddow's anecdotes, which help offer fodder for future political discussions.

There's an extensive collection of firearms scattered throughout the home, as well, hanging from walls and sitting





out in the open. And in his bedroom, a small closet-like space bearing a piece of paper with Dante’s familiar, “Abandon hope all ye who enter here,” on the door, Wayne picks up a large revolver from a dresser next to his unmade bed, opens the chamber and lets the bullets fall from the cylinder into his palm. It’s a police-issued .38.

It’s one of possibly dozens of guns in the small house, many of which are of the ancient sort, including a musket that Wayne would take shooting in the desert until cleaning up the gunpowder trails proved too much of a chore. Wayne shows off gun after gun, quite proud of his collection, including a palm-size .25 Colt automatic.

Wayne’s office is located just off of the

main room. It’s a small space with two large windows and shelves devoted to his extensive collection of cataloging just about everything. On a wall next to the bookshelves hang a number of antique guns and swords, with a miniature cannon displayed above the door. A couple of paintings sit on adjacent walls – one features a stern-faced Abraham Lincoln around the time of his Cooper Union address. The other depicts a fierce battle scene, part of a series for which Wayne only completed two paintings, the second hangs above his bed in his nearby railroad-connected bedroom. Both are evidence of yet another hobby, which manifested itself most famously when Wayne designed Apple’s extremely un-Jobsian logo, a woodcut-like image of

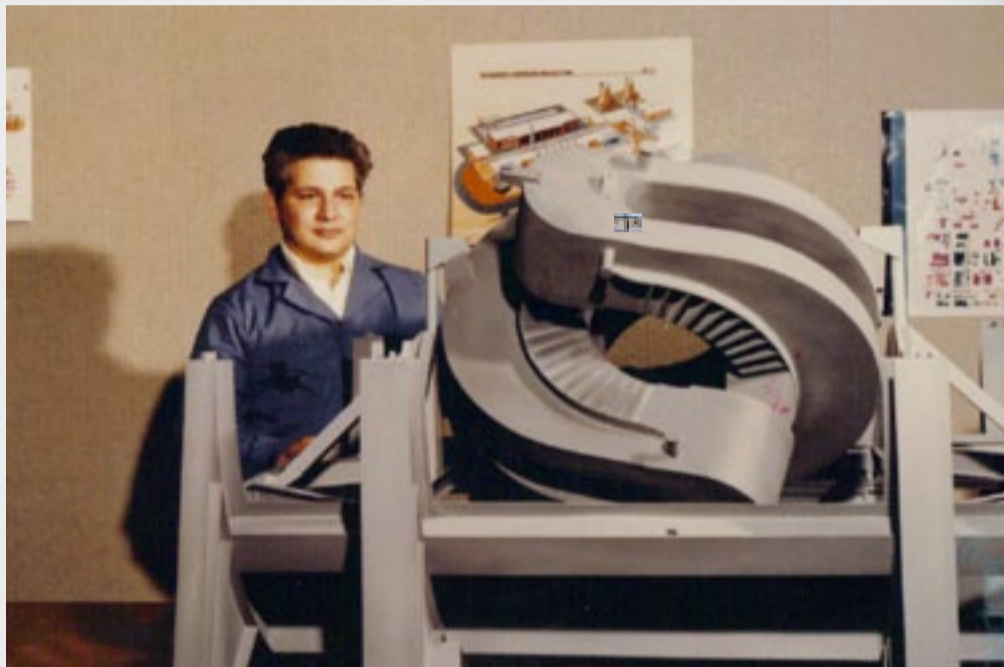
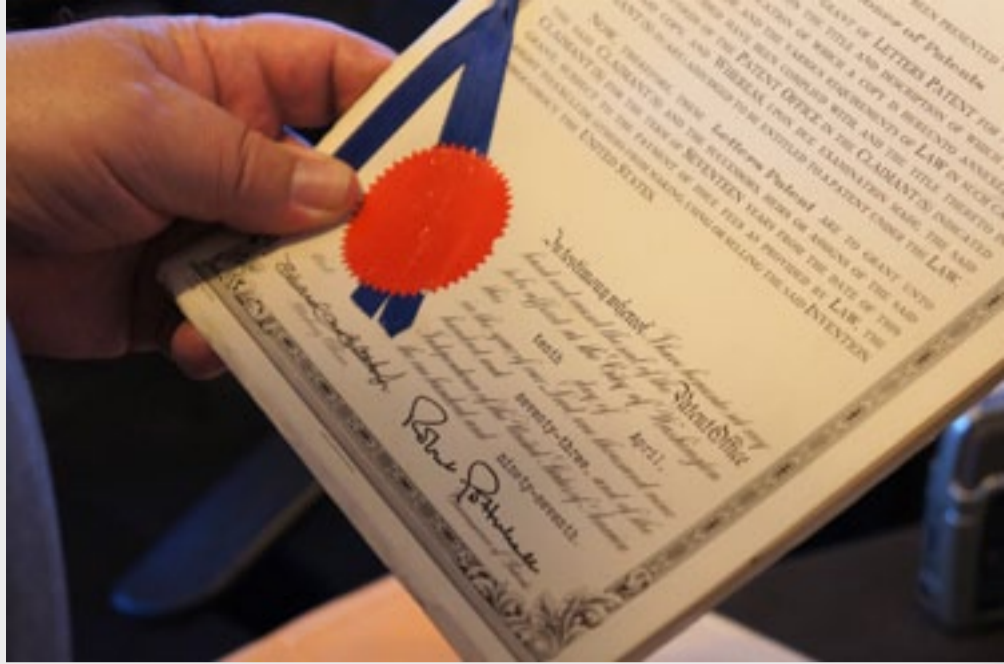


Sir Isaac Newton sitting beneath a tree, one well-placed falling fruit away from inspiration.

An old clock ticks away the seconds loudly, and across the room, a small cardboard box sits under a chair, with the words “FAN MAIL” typed out in big block text (during our time together, we’ll swing by a small post office housed in a pre-fab building to mail out a signed copy of *Adventures*). The room is also scattered with assorted memorabilia of Wayne’s long, strange trip. There’s an image of a young Wayne smiling faintly in a lab coat at his then dream job at Lawrence Livermore Labs, an image of him smiling larger while working at Vegas’ Golden Nugget Hotel & Casino, a handful of patent papers brandished with their original red and blue seals and a glossy shot of the Vulcan slot machine he created, a name betraying his love of all things science fiction.

On his desk is a low-level Dell desktop with a bundled flat screen monitor purchased about a year and a half ago. Much to Wayne’s chagrin, the system was running Vista, rather than the Windows XP to which he was far more accustomed. “I didn’t know if all my programs and files would work on Vista,” Wayne explains, with a hint of exasperation. I’ve got an accumulation of 20 years of this stuff and I don’t want to lose it all simply because of this wonderful new technology for which I have absolutely no use of anyway.”

He eventually caved and bought a cell phone, as well. Wayne owns an old



Motorola flip phone, which he rarely actually carries on his person, instead relying on customers to utilize his land-line. Wayne, somewhat famously, never owned an Apple product until quite recently, when an interviewer gifted him an iPad, and while he was taken with the tablet, it eventually found its way into the hands of Wayne’s adopted son, who now claims full ownership of the thing.

The room’s real treasure trove is housed in a first class USPS mailer. Wayne pulls the contents out and places them on his desk. There’s an original Apple I warranty and manual, the latter of which feature’s Wayne’s Isaac Newton logo, and, compared to the current crop of user friendly technical manuals, reads as tho it were written in some

“I have no disappointments... My participation with Apple would have gone against my ambitions in life.”

alien language. An order form for its follow up is also mixed in, imploring buyers to “get on the list and receive your Apple II before the rush.”

Pages and pages are devoted to plans and pencil drawings of an Apple I enclosure, which Jobs enlisted Wayne to create after he unceremoniously exited the company. The wood-paneled housing was designed to be low cost, featuring a sliding door meant to shield the keyboard, which would turn the computer on when open. “To this date, I’ve never seen this idea implemented in any computer design,” Wayne writes in *Adventures*. “Then, I suppose it has only been 35 years, and it takes a bit of time for good ideas to finally come into practice.” Apple, for its part, passed on the prototype.

The envelope also houses a photocopy of the original Apple contract, penned by Wayne himself – a fact that quite impressed Wozniak. It was Wayne’s

copy of the contract that wound up on the Sotheby’s auction block. The co-founder parted ways with the contract back in the early 90s for around \$500, when an autograph dealer asked if he might have any signatures of value. It’s one of a number of misfires that dot Wayne’s life, one of the few he describes with a rare regretful tone.

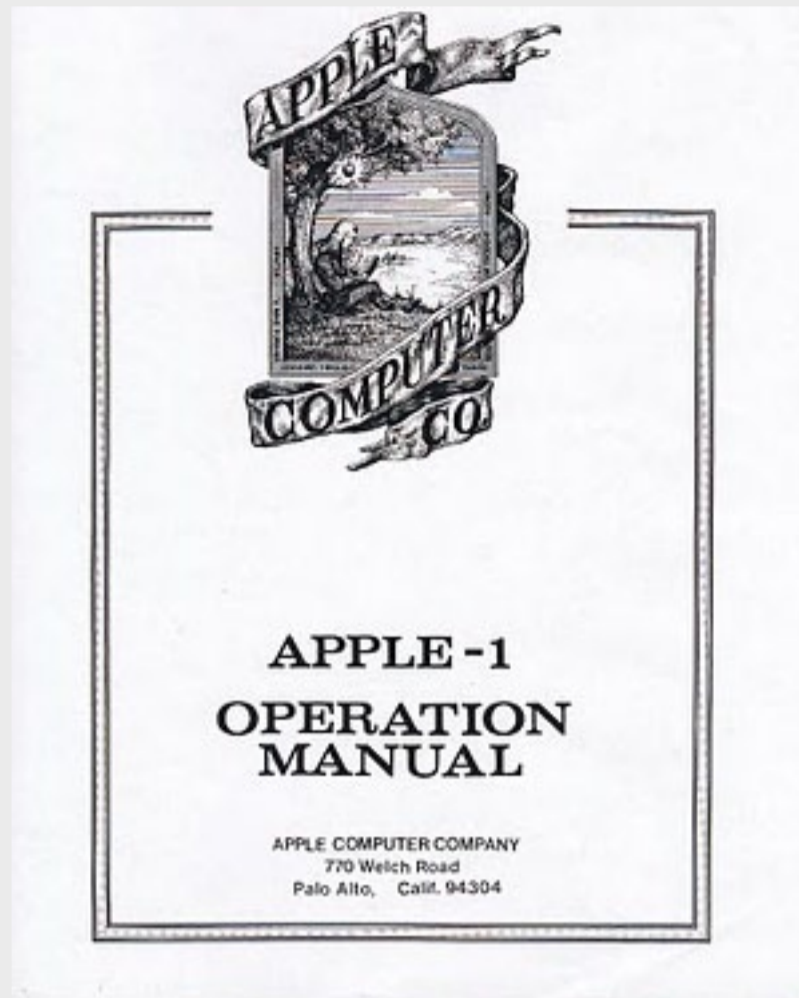
Mentioning the Statement of Withdrawal of General Partner, a copy of which also lives in the envelope, however, won’t elicit any self-pity from the man. “I have no disappointments,” Wayne explains. “[Jobs and Wozniak] went on and did their thing, and they did it magnificently. I could not actually have been a part of it. There were just too many aspects of it. My participation with Apple would have gone against my ambitions in life. I wasn’t seeing, in the Apple phenomenon, anything that fit what I regarded as my approach to life, what I wanted to make my life mean in

the course of my activities, what I was searching for.”

Wayne recognized something in Jobs and Wozniak, during his time at Atari, forming a particularly strong bond with Jobs, which involved deep discussions over lunches and long walks. “We’d have lunch together, we’d have dinner together, he came over the house for dinner, we’d have walks and physical activities. We went for walks together and we talked. He told me what his plans and ideas were and was bouncing them off of me. Should he really go off in this direction or that direction?”

Wozniak was the engineering genius who designed computers for the sheer fun of it, and Jobs was the consummate businessman who turned it into an industry. “Jobs had a very focused attitude, and I knew he was going to go someplace and he was going to make sure he got there,” explains Wayne. “He couldn’t match Wozniak, but he recognized the significance of Wozniak. The reality was that Jobs had a focused intent to do something dynamic in business and he would get there on whatever device would carry him.”

“If he’d lived in the 1830s and had met Sam Colt, he would have ridden to his success on the Colt revolver,” Wayne adds. “The device was just a means to an end. He’d actually asked me if he should go ahead with this. With Steve Wozniak. He was concerned about it because there were all these other interests that he had and he was afraid that he would lose out on these other interests if he pursued



this enterprise. And I said ‘Well, you could pursue these other enterprises more easily if you had money in your pocket, and this looks like a money making thing. Go ahead and do it. Take the money and do your thing.’”

But again, at 77, Wayne has no desire to pull punches when describing the late former partner. “He was — not to put too fine a point on it — a ruthless businessman. Absolutely ruthless, I had a first hand experience in that. I was one of the few people, I think, who actually said ‘no’ to him and he didn’t like it.” Wayne said ‘no’ by turning down two separate job openings offered up by Jobs himself after leaving the company, a fact he insists backs up his claims of not regretting his exit from the company. “If I had any regrets,” Wayne says simply, “I would have picked it up



on the first pass.”

Wayne would have been a poor fit for the company, he insists, with Jobs relegating him to a backroom administrative role, rather than allowing him to get his hands dirty with the engineering work he thrived on. So, in spite of that momentary diversion, he remained at Atari during those infamous 12 days.

It's out of his office that Wayne runs his coin and stamp business. His workshop, meanwhile, holds the link to his electronics past. The space is housed in a converted garage he began setting up shop in, after his adopted family moved

in. He tells me that he's going to invest more time into the space once the current resurgence of interest in his brief time with Apple settles down – at the moment, the space really does feel like a garage, with countless boxes piled everywhere, bearing descriptors like “Scrap Plastic” and “Integrated CKTS” scribbled in Sharpie.

There are ancient pieces of electronics scattered throughout and some heavy-duty shop equipment on a couple of workbenches. Hundreds of tiny drawers line two walls, each with a small label describing their contents, all min-



ute electronic components. Wayne pulls down a small black box, fires it up and begins fiddling with its knobs, emitting a high-pitched squeal that changes tones as he adjusts settings. “This,” he tells me with a smile, “is a ‘Do-Nothing’ machine.”

There are some boxes here and in a rented storage space filled with slot machines Wayne built, having re-entered the field for some time after his brief stint with Apple. Those boxes, like the rest, represent the past, a long history in electronics that has seen him traveling across states and industries, in search of the next adventure. They also offer a potential future for a restless mind that hasn’t slowed down in this state of semi-retirement.

On the other side of the garage is a giant black railroad safe, the words “Railway Express Agency” written in faded, rusted script, over an even fainter “Wells Fargo.” The safe belonged to two different railway companies and sits in Wayne’s garage, now emptied of its valuables. It’s a two-ton beast that appears impossible to crack, though he admits that someone managed to do it before – an inside job, perhaps, robbing Wayne of his life savings. It was a tragic event that played a large role in his decision to move out to Pahrump. We head back through the house to the Malibu.

“People always ask me where Jobs got ‘Apple,’” Wayne offers without prompt on the final drive back to my hotel. “I never thought to ask. I suspect it has something to do with ‘bite’ and ‘byte.’”

“You must have liked the name,” I offer.

“It was his decision to make,” he answers, simply, without a hint of judgment.

“Well,” I respond, “If you hadn’t, I’m sure you would have said something.”

“True. And it gave me plenty to work with for the logo.”

“Sir Isaac Newton.”

“And Wordsworth,” he answers. “I don’t suppose you know Wordsworth.”

“Not well,” I confess.

“The Evangelist St. John my patron was,” Wayne begins, with a touch of dramatic flourish, piloting his Malibu down Homestead. The scenery is little more than dried brush, fenced in by snowcapped mountain ranges on either side, the brim of a cowboy cap belonging to a casino mascot peeking out just over the horizon. “Three Gothic courts are his, and in the fir was my abiding-place, a nook obscure.” He makes his way through the full stanza, all 18 lines of free verse, without pause, culminating with a satisfied sense of finality:

*Of moon or favouring stars, I could behold
The antechapel where the statue stood
Of Newton with his prism and silent face,
The marble index of a mind for ever
Voyaging through strange seas of thought, alone.*

It’s a fragment of “The Prelude,” a name Wayne can’t remember for the life of him, in spite of his own flawless repetition of the familiar snippet. The final part had found its way onto the wooden




border of Wayne's infamously ornate logo, some 35 years prior, a stream of words interrupted by a waving ribbon bearing the words "Apple Computer Co." I roughly paraphrase Jobs biographer Walter Isaacson's suggestion that the borrowed slogan "fit Wayne's self-image more than Apple Computer." Wayne smiles at the suggestion, adding that he certainly can't argue with the assessment.

The whole logo was 100 percent Wayne, and it was the first thing to go, with the entrance of marketing guru Regis McKenna, according to Isaacson, replaced by the far more familiar – and Jobsian – bite image, which has existed as the company's logo in some form or another ever since. Wayne insists that Jobs liked his Newtonian contribution enough to have it blown up into a banner for promoting the Apple I at tradeshow.

Perhaps fittingly, however, just like

Wayne himself, the Victorian logo was an ill fit, and both would ultimately end up, as he put it, a footnote in somebody else's story. It was a story that, Wayne candidly admits, he only read a small portion of, hunting for mentions of his own name – a modest undertaking, given his rather scarce face time in the 656 page tome, coverage which Wayne refers to as "curt."

But then, in spite of its adventurous subtitle, Wayne's own autobiography devotes a mere dozen pages to the matter – arguably a generous sum, given his 10-day-long employment with the nascent company. It's a stretch of time that can hardly even be regarded as a pit stop in Wayne's sometimes lonely perpetual voyaging. 

Brian's work has appeared in Spin, The Onion, Entertainment Weekly and various other publications.



REVIEW

Lenovo IdeaPad U400

The U400 combines a lightweight design with discrete graphics — something we rarely see — but its flaky trackpad, crowded keyboard and lack of truly automated graphics switching make it tedious to use.

BY DANA WOLLMAN

If you need evidence that the Ultrabook fad isn't impressing everybody, look no further than our inboxes. More than a few of you have been inquiring about the Lenovo IdeaPad U400, the 14-inch big brother to the IdeaPad U300s. And we think we understand why. Starting at a more palatable price of \$800, it offers the same understated design as the U300s, except it brings an extra inch of screen

real estate, along with an optical drive and discrete graphics. The best of both worlds, right? Beauty and a little more brawn? Not exactly. Though it looks the same, the U400 trades various components, starting with the storage disk and continuing on to the touchpad drivers. (Specs, schmecs, *are we right?*) So how much of a difference does this new set of innards make? Read on to find out.

Look and Feel

Before we begin, let's be clear on what the U400 is, and what it isn't. Yes, it has the same industrial design as the U300s, and at first blush it does indeed look like the same machine, scaled up in size. But make no mistake: the U400 is not a 14-inch Ultrabook, and if you tell yourself it is you'll be sorely disappointed when you lift it out of the box. Now it's true, the idea that Ultrabooks have to weigh less than three pounds is arbitrary — after all, we made an exception for the 3.3-pound HP Folio, didn't we? Even so, the U400 makes room for a slot-loading optical drive, and is markedly heavier as a result.

That's not to say it's not a pleasure to hold, though. At 4.37 pounds (1.98kg) and 0.89 inches (22.6mm) thick, we had no problem slipping it into a tote bag and carrying it around on our shoulder — much less shuttling it from room to room in the office. It doesn't have the same wedge profile you'll see on lots of other laptops. Instead, Lenovo used good old-fashioned paper books as its inspiration, and designed the laptop so that the top and bottom side extend a tiny bit past the sides, like covers on a novel. The result is some razor-sharp edges, along the sides and front.

**Make no mistake:
the U400 is not a
14-inch Ultrabook,
and if you tell
yourself it is you'll
be disappointed.**



All told, the U400 is one of the lightest 14-inchers you'll find. One exception is the Dell XPS 14z, but with a starting weight of 4.36 pounds, the difference is basically negligible. And certainly, the U400 feels noticeably less dense than either the 13-inch MacBook Pro (4.5 pounds) or the soon-to-be-discontinued HP Envy 14, which tips the scales at 5.7 pounds.

Beyond that, though, this is, for better or worse, the same design we first showed you when we reviewed the U300s. Like its little brother, it's fashioned entirely out of sandblasted, anodized aluminum, and is available in the same graphite gray (but not that rust-colored orange offered on the smaller model). That smooth material covers the lid, extending onto the palm rest, keyboard deck, bottom side and even the bezels. As ever, the metal lid picks up scratches easily, though it at least does a good job masking fingerprints. Overall, we're as smitten with the understated design as we were the first time around.

Other charming details have carried over as well: a discreet, spun metal power button, along with equally low-key branding on the lid and corner of the palm rest. Lenovo also once again painted the Intel, Windows and FCC labels on the bottom side, instead of plastering the palm rest with stickers. There's also that chiclet keyboard and spacious glass trackpad, which of course we'll tell you about in a moment.

In addition to that slot-loading DVD burner, Lenovo added an extra USB 2.0

port, bringing the total to two. Lenovo also added an Ethernet jack, while keeping the HDMI port, USB 3.0 socket, audio port and 1.3 megapixel webcam. Shockingly, though, the SD slot is still MIA. If you never use yours, feel free to skip the rest of this paragraph entirely and meet us back in the section where we talk about the keyboard. But for anyone who takes a lot of photos, it's an annoying omission — why travel with an external memory card reader when you could just as easily find a laptop with that feature built in? Given that even inexpensive netbooks have it, we just don't see a good reason to leave it out.

Keyboard and Trackpad

When Lenovo blew up the Ultrabook, it forgot to expand the keyboard along with it. This feels like the same, slightly cramped panel we tested on the U300s, which is a shame given that Lenovo had a larger 13.4-inch wide chassis to work with. As with the U300s, the keyboard doesn't come close to the edge of the deck — a waste, since every major key remains shrunken. The keys also have a fair amount of travel, though they still manage to feel bouncier than other chiclet 'boards we've tested recently (we're looking at you, Zenbooks). Even after several days of testing, we regularly stumbled trying to find the Tab, Left-Shift and Backspace buttons while touch-typing. Similarly, the arrow keys are painfully undersized as well. And while that might not bother everyone, it's a nuisance if you're the kind of typist who



prefers to highlight text using the keyboard.

Also like the U300s, this is not offered with a backlit keyboard. As always, this won't be a big deal for everyone, though it is an amenity you'll find on the Dell XPS 14z and 13-inch MacBook Pro. (As it happens, we prefer these keyboards anyway because they're better spaced with cushier keys.)

We do have some happy news to share, and that's that the keys are every bit as sturdy as the ones you'll find on the U300s (and every other Lenovo lap-

top, really). Once again, Lenovo went with flat caps instead of the scooped shape that makes ThinkPad keyboards so comfortable to use. And while that might disappoint the purists out there, they have a nice, soft finish and emit a pleasant, low-pitched sound, even when you're typing furiously.

Unfortunately, we don't have many nice things to say about the trackpad. And what a rude surprise this is, too: after all, it looks just like the one we liked on the U300s. But as any geek knows, drivers are everything and the U400 we

tested uses a different touchpad supplier than the U300s we reviewed. This go 'round, it's powered by Cypress, not Synaptics, and the result, dear readers, is absolutely maddening. Though we stuck it out and typed a sizeable chunk of this review on the U400, we frequently lost patience as the cursor jumped to random lines in the document. Sometimes, the cursor went rogue even when we were just using the keyboard. As it turns out, you can press F6 to disable the touchpad, though we would have preferred that this happen automatically.

The U400 runs into many of the same pitfalls as other laptops with giant, clickable trackpads. At times, it mistook left clicks for right clicks. Two-fingered scrolling requires a little pressure, but with some practice, we were able to carefully page through long Wikipedia entries and dozens of Gmail labels. Unfortunately, we never quite got the hang of pinch to zoom. This, too, forces you to bear down with your fingers, but even once you master that motion the transitions are choppy, and it can be difficult to scale the text to your liking.

It's worth noting that as unreliable as the touchpad is, it supports some other, more surprising gestures. As with the U300s, you can use four fingers to open a master control window with floating aero cards, showing all the windows and docs you have open. Additionally, you can swipe left or right with two fingers to scroll through wallpaper, and move four fingers left or right to scroll between items.



Display

The U400's display is exactly what you'd expect to find on a \$900, 14-inch system, which is to say it has a reflective finish, 1366 x 768 resolution and limited viewing angles. With the laptop resting on your legs you'll have pretty narrow visibility — dip the screen forward even a little bit and it'll suddenly become washed-out. Place it farther away, though — say, on a coffee table — and you might have better luck. For our part, we were able to follow along with *Breaking Bad* with the screen dipped forward slightly (but only slightly). Viewing from the sides is doable too, though the screen darkens as soon as you start watching from an off-kilter angle, which means some shadow detail is going to get lost in the mix.

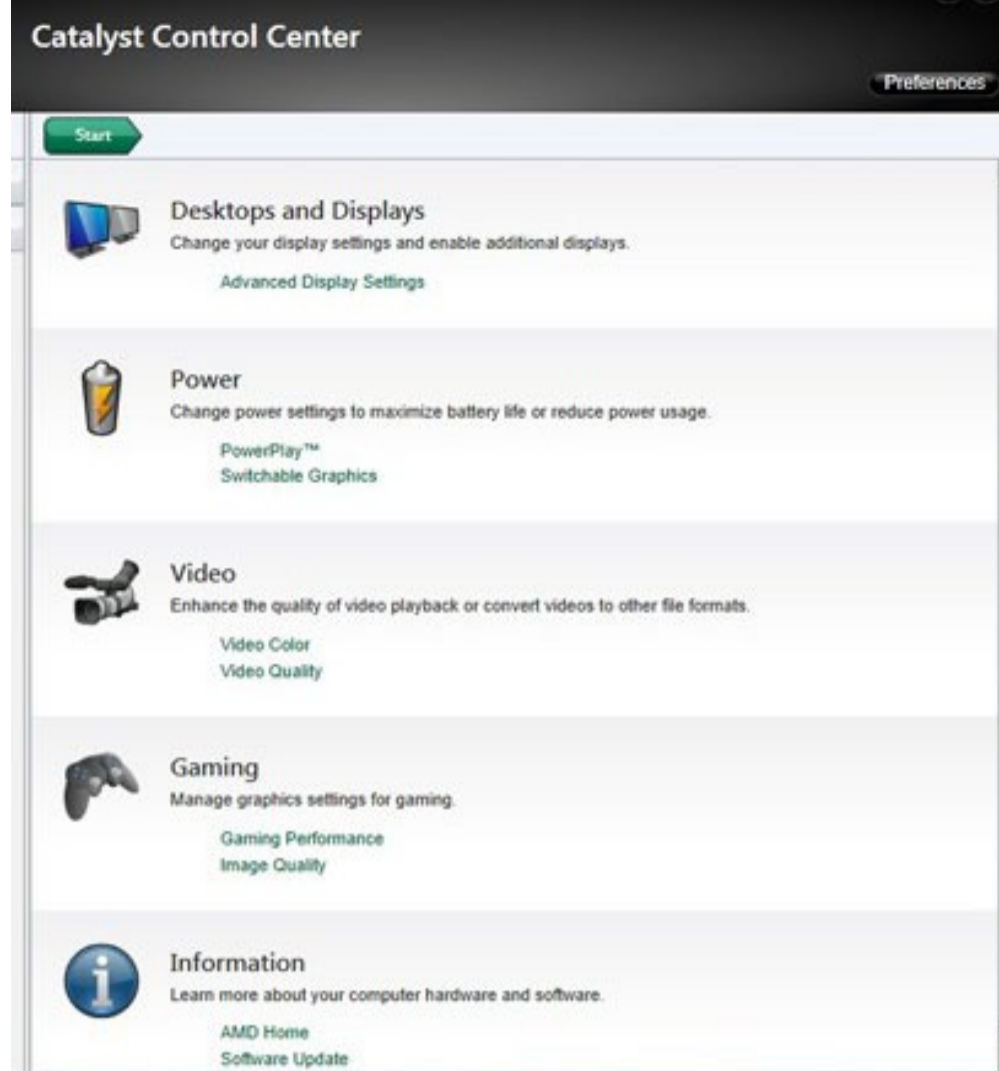
Like the U300s, the U400 packs Intel Wireless Display, a technology that, for whatever reason, isn't that easy to find on other laptops, even though it's been available for almost two years now.

If you've managed to escape it all this time, here's a quick primer: Wireless Display (WiDi, for short), lets you mirror your display on an HDTV or monitor, and that includes streaming 1080p video. To make this happen, you'll need a small adapter that plugs into your TV via HDMI. By now, we've tested the technology several times, both in its first and second generation, and we've always been impressed by how easy it is to initiate streaming, which typically entails pressing a launch key on the laptop. In general, 1080p video plays fluidly, though you'll want to keep your host laptop out of sight, since the notebook and TV are usually at least slightly out of sync.

Sound

The U400's twin single-watt speakers produce predictably hollow sound, courtesy of SRS, but unless you're a discerning audio snob, we're guessing it won't bother you much. Percussions and other low notes tend to sound subdued, but on the flip side, at least, nothing ever sounds too tinny. Our biggest complaint was that some of the music we sampled had a contained, distant sound. A shame, we know: you really wanted Celine Dion's rendition of "O Holy Night" to fill the room, didn't you?

We suppose if you had the right PC handy for side-by-side comparisons the U400's audio, as innocuous as it is, wouldn't be acceptable. Lenovo simply hasn't honed in on speaker quality the way ASUS did with the Bang & Olufsen-equipped Zenbook UX31, or the way HP



does with its Beats-spangled laptops. Still, you'll find worse audio in machines like the Dell XPS 14z, whose sound gets buzzy and distorted as you crank the volume. Truth be told, as far as audio goes, there isn't even that appreciable a difference between the U400 and a MacBook Pro, a machine that'll cost you at least \$300 more.

Performance

We tested an \$899 version of the U400, configured with a 2.4GHz Core i5-2430M CPU, 6GB of RAM, a 750GB 5,400RPM hard drive and two graphics cards: Intel HD 3000 on the integrated side and AMD's Radeon HD 6470M on the discrete, coupled with 1GB of video memory. Getting those raw numbers out of the way, it steamrolls the Core i5-packing Sony VAIO SB we reviewed a few months back, and even lands in *kind* of the same neighborhood as the Dell XPS 14z with Core i7. It's even more

BENCHMARK	PCMARK VANTAGE	3DMARK06	BATTERY LIFE
Lenovo IdeaPad U400 (2.4GHz Core i5-2430M, Intel HD 3000 / AMD Radeon HD 6470M 1GB)	7,281	4,463	4:18
Dell XPS 14z (2.8GHz Core i7-2640M, Intel HD Graphics 3000 / NVIDIA GeForce GT520M 1GB)	7,982	5,414	4:54
HP Envy 14 (2.3GHz Core i5-2410M, Intel HD Graphics 3000 / AMD Radeon HD 6630M 1GB)	6,735	7,214	3:55
Sony VAIO SB (2.3GHz Core i5-2410M, Intel HD Graphics 3000 / AMD Radeon HD 6470M 512MB)	5,129 (stamina mode) / 5,636 (speed mode)	3,609 (stamina) / 5,128 (speed)	3:39 (speed) / 5:11 (stamina) Extended battery 9:49 (speed) / 12:21 (stamina)
Dell Inspiron 14z (2.3GHz Core i5-2410M, Intel HD Graphics 3000)	6,177	4,079	6:37
HP Pavilion dm4 (2.4GHz Core i5-520M, Intel HD Graphics)	5,459	1,930	4:25
Lenovo IdeaPad U300s (1.8GHz Core i7-2677M, Intel HD Graphics 3000)	9,939	3,651	5:08
Toshiba Portege Z835 (1.4GHz Core i3-2367M, Intel HD Graphics 3000)	5,894	3,601	5:49
ASUS Zenbook UX31 (1.7GHz Core i5-2557M, Intel HD Graphics 3000)	10,508	4,209	5:41
Acer Aspire Ultrabook S3 (1.6GHz Core i5-2467M, Intel HD Graphics 3000)	5,367	3,221	4:11
13-inch, 2011 MacBook Air (1.7GHz Core i5-2557M, Intel HD Graphics 3000)	9,484	4,223	5:32 (Mac OS X) / 4:12 (Windows)
Samsung Series 9 (1.7GHz Core i5-2537M, Intel HD Graphics 3000)	7,582	2,240	4:20

Notes: The higher the score the better. For 3DMark06, the first number reflects score with GPU off, the second with it on.



or less on par with the entry-level 13-inch Samsung Series 9, which packs an SSD and costs \$450 more. The U400's 43-second boot time and 100 MB/s transfer rates are respectable too, though hardly anything to write home about either.

Still, it's a far cry from what you'll get from an Ultrabook — including the IdeaPad U300s. Though the U400 and its little brother both make use of Lenovo's Rapid-Drive technology, the SSD-packing U300s pulls off an insane 18-second boot, making the U400's 43-second startup time seem common. And it should go without saying that the U300s' Micron solid-state drive runs circles around the Western Digital 5,400RPM HDD inside the U400 we tested. Go with the U300s and you'll enjoy real world read / write speeds of 250 MB/s and 200 MB/s, respectively. If you opt for the U400 you'll save yourself a few hundred bucks, but the transfer rates will drop by half, if not more. And that's not even getting into the fact that the U300s is thinner, lighter, longer-lasting and has a more reliable touchpad. Shall we go on?

Benchmark scores aside, its 5,400RPM hard drive didn't stop us from multitasking, juggling email, chat, web surfing and a good deal of streaming. Like its brethren, the laptop also runs cool, thanks largely to Lenovo's "breathable" keyboard, which is designed to draw air in through the sides and push it out the bottom. Also like other Lenovo laptops, including the U300s and last-gen IdeaPad U260, it makes good use of Intel's Advanced Cooling Technology, which you'll only find in Lenovo systems.



The result is a machine that stays cool to the touch, even when you settle into long, full-screen streaming sessions. For us, that's a relief, given that we've seen laptops get toasty as soon as you fire up TweetDeck. Still, solid real-world performance means little when a flaky touchpad and cramped keyboard make everyday computing a chore. Look around, even in Lenovo's product line you'll find laptops with smoother touchpads and faster performance that are simply more pleasant to use.

As for those two graphics cards, while you might assume they kick in automatically, depending on the task at hand, the hand-off here isn't nearly as smooth as what we've seen with NVIDIA's GPUs. To make the most out of that 6470M, you'll need to open AMD's Catalyst Control Center and manually specify which apps trigger which graphics card. A fun challenge for the tinkerers among you, but a pain in the rear for the rest of us who don't have much time to spare for tweaking.



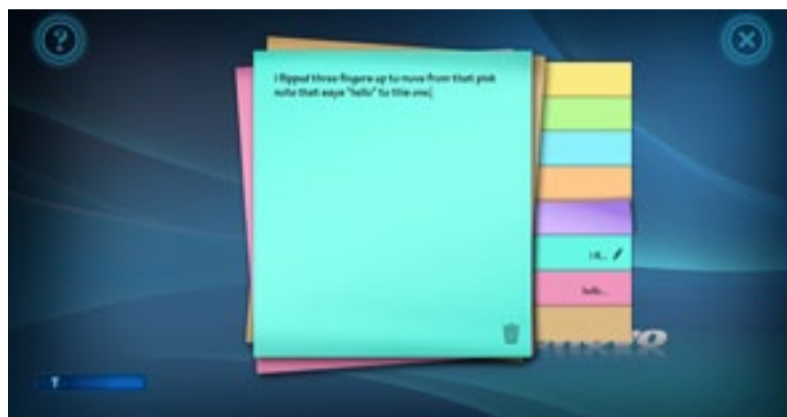
Battery Life

The U400's four-cell, 54Wh battery is rated for up to seven hours, but in our (admittedly taxing) rundown, it lasted four hours and 18 minutes with WiFi on and a video looping off the hard drive. To be fair, we were able to squeeze out closer to five hours of use when all we were doing was writing in Google Docs, checking email, talking in GChat and running the occasional web search.

That's respectable for a 14-inch laptop, though we've certainly seen better. Take the Dell XPS 14z, for instance, which squeezes out an extra 25 minutes or so. If you can settle for integrated graphics, the Dell Inspiron 14z lasted more than six and a half hours in the same test, though even the Sony VAIO SB with switchable graphics managed five hours and change when we flipped it to the power-saving "stamina" mode. The only recent 14-incher we can recall with worse battery life is the HP Envy 14 with Sandy Bridge, and that's about to disappear as HP ushers in new (larger-screened) models.

Software

It's such a relief to kick off the software section of a laptop review and not have to rattle off a long list of pre-installed programs. Indeed, the bloatware load is light and unobtrusive, with just a few innocuous apps on-board. These include: Google Chrome, Microsoft Security Essentials, Microsoft Office 2010, Windows Live Essentials 2011 and CyberLink Power2Go, Lenovo PowerDVD and You-



Cam webcam software, both rebadges of widely used CyberLink programs.

As with the U300s, Lenovo also threw in its Easy Notepad software — a sticky notes app that lets you use three fingers to cycle through different scraps of virtual paper. As ever, we appreciate that the notes are all collected in one place, instead of peppered randomly about the screen, and we also like that by default the stickies have different colors, making it easier to distinguish between different notes to self.

Also on tap: Lenovo's idiot-proof One Key software for backing up and recovering your data. And, like its little brother, the U400 has Computrace's LoJack module built in so that you can potentially track and remotely wipe your laptop if it goes missing. Of course, it's up to you to activate the service yourself, even though the hardware component is already baked in.

Configuration Options

The U400 starts at \$800 with a 2.2GHz Core i3-2330M, 4GB of RAM and a 500GB hard drive. Like other IdeaPads in Lenovo's stable, it's not configurable, meaning the specs aren't negotiable (unless you want to seek out a different pre-built model, that is). In addition to Core i3 and i5, it's available with a 2.7GHz Core i7-2620M. Depending on the market, you'll find configurations with 8GB of RAM and either 1TB in HDD storage or a 64GB solid-state drive. You only get one choice as far as graphics go (ditto for the battery and optical drive).

Right now, there are three models for sale in the US, specifically: that \$800 Core i3 model, the \$900 Core i5 configuration we reviewed and a higher-end one with a Core i7 processor and 8GB of RAM. This particular model costs \$1,449 (or \$1,299 on the web), with a promotional online discount that brings the price to \$1,039 at Lenovo.com. If you've been paying attention, you may have noticed that though this is the highest-end model available in the states, it's not the most tricked-out Lenovo has to offer. Indeed, the company confirmed that the 1TB hard drive and 64GB SSD simply aren't offered in the US, though they're available in other regions.

The Competition

We get it: as much as Ultrabooks make for eye-catching status symbols, they're not for everybody. We know Darren isn't the only techie out there reluctant to part with his optical drive, even for occasional backups. For those of you looking for a lightweight laptop with a DVD burner (and maybe even discrete graphics if you're lucky), you've got a few options.


Starting with one of our favorites, the Sony VAIO SB series is our favorite 13-inch laptop with a built-in optical drive, though we like it so much it might trump its 14-inch competitors too. Starting at \$800, it offers a bright, matte display, impossibly lightweight design, solid performance, discrete graphics and long runtime, even without the optional slice battery. Step up to the VAIO SA series (\$1,000 and up) and you'll get a higher-resolution 1600 x 900 display and a slightly thinner design. Either way, these machines are highly customizable, with a Blu-ray player and sheet battery for those of you with extra cash to burn.




We also have a soft spot for the HP Envy 14 (\$1,000 and up), though it's soon to go bye-bye as the company ushers in new, redesigned models, with the smaller of the two sporting a larger 15-inch display. If you pull the trigger while you still can, the Envy 14 offers one of the most stunning designs we've seen on a laptop, along with discrete graphics and damn good performance. However, the display on this model isn't what it used to be, and as you can see, the battery life is even shorter than what you'll get on the U400. The other big trade-off: it's markedly heavier, at 5.7 pounds, and you're only getting an extra half inch of screen real estate in return.

If you'll recall, we also had a great time testing out the XPS 14z (\$900 and up): its battery life is among the longest you'll enjoy on a laptop this size, and the keyboard and trackpad are remarkably comfortable to use. And remember that this weighs almost the same as the U400, so you won't be sacrificing anything in terms of portability (design sensibility, is a different story).

Not to be outdone, Samsung has the new 14-inch Series 7 Chronos, which costs \$1,099. We hope to test this soon, but in the meantime, the 4.3-pound Chronos at least matches — if not beats — the U400 on paper. For \$1,100, it has the same Core i5 processor and 6GB of RAM, along with a 750GB hard drive, more powerful 1.5W speakers and slightly beefier Radeon HD 6490M graphics with 1GB of video memory. It

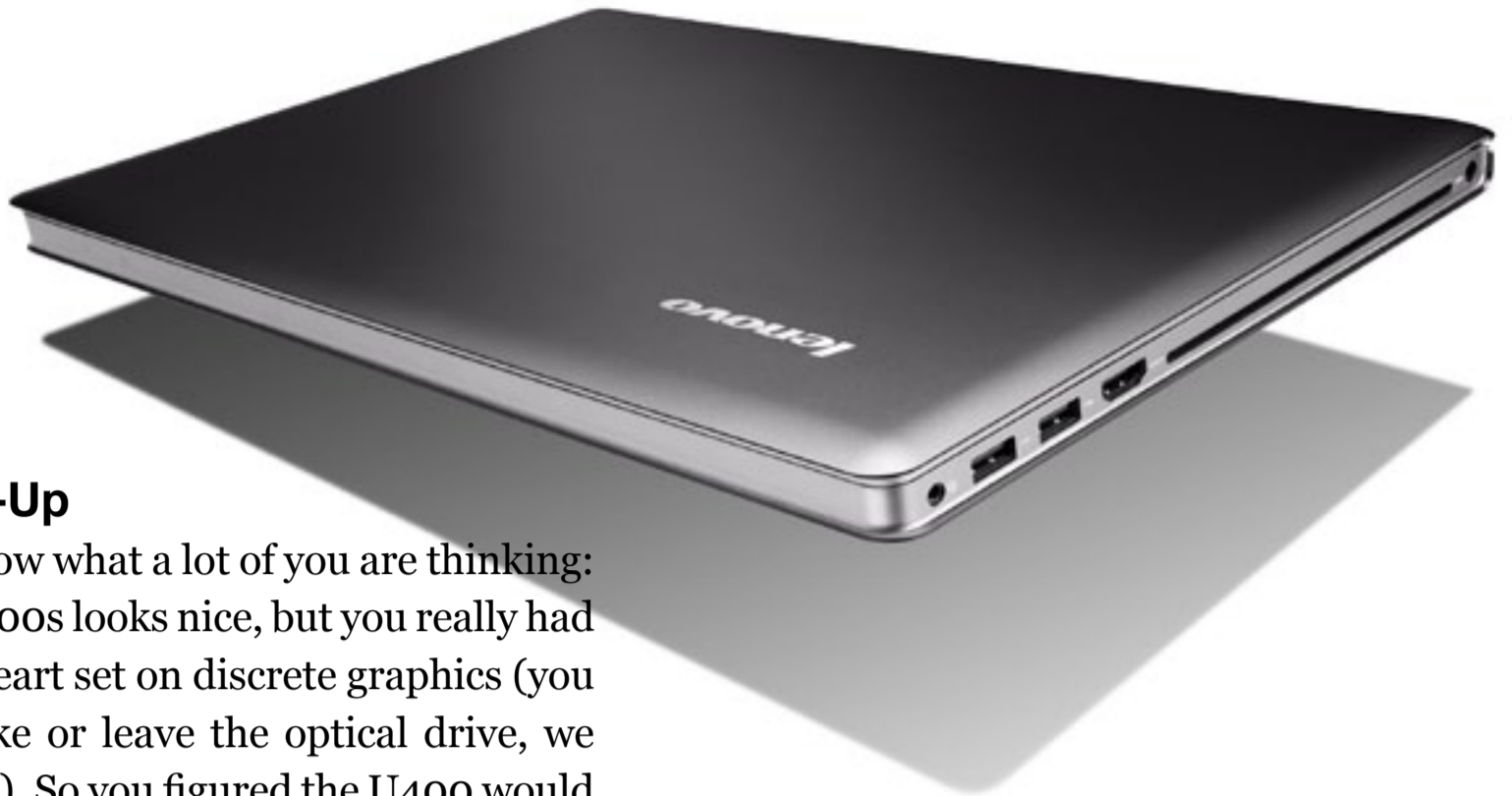


The U400 isn't just bulkier; it has shorter battery life, less impressive performance and a flaky touchpad, thanks to a wholly different set of drivers.




has a higher-resolution 1600 x 900 display and yes, it includes an SD card. Again, we haven't reviewed it yet, so we can't speak to battery life or performance, though it certainly looks promising.

And finally, there's the 13-inch MacBook Pro, which starts at \$1,199. As always, a few caveats apply: it's a durable, well-built machine with long battery life and solid performance (though it doesn't have discrete graphics). Still, for the money, you might want a display with more pixels than the 1280 x 800 this has to offer. You might also crave more ports than the Ethernet jack, Thunderbolt port, FireWire 800 and dual USB 2.0 sockets. And lastly, it's heavier than the U400, VAIO SB or XPS 14z, at 4.5 pounds. It's an attractive, well-performing machine with a comfy keyboard and trackpad. Still, to the extent that specs and ports are part of the equation, this is hardly a bang-for-your-buck kind of deal.



Wrap-Up

We know what a lot of you are thinking: the U300s looks nice, but you really had your heart set on discrete graphics (you can take or leave the optical drive, we reckon). So you figured the U400 would include everything you loved about the U300s, along with a few beefier specs thrown in to make geek hearts sing. Wrong. The U400 isn't just bulkier; it has shorter battery life, less impressive performance and a flaky touchpad, thanks to a wholly different set of drivers. If you're also considering the U300s, just take a deep breath, resign yourself to spending a few hundred more and choose that: it's simply a better deal, and if you were considering the U400 at all, then the U300s' lack of an SD slot and backlit keyboard shouldn't be a problem.

But if an optical drive and more robust graphics is key, you can do better than the U400. We'd sooner steer you toward the Sony VAIO SB series or Dell XPS 14z, each of which combine good performance, long runtime and sound ergonomics. (We're optimistic about Samsung's Chronos, too.) Heck, even Lenovo is capable of something better. 

Dana Wollman is Reviews Editor at Engadget, a marathoner, lover of puns and a native Brooklynite.

BOTTOMLINE

Lenovo IdeaPad U400

\$800+

PROS

- Elegant, understated design
- Lightweight, even for a 14-inch laptop

CONS

- Jumpy touchpad
- Cramped keyboard for a laptop this size
- No SD slot
- Graphics switching isn't fully automatic

» The U400 combines a lightweight design with discrete graphics — something we rarely see — but its flaky trackpad, crowded keyboard and lack of truly automated graphics switching make it tedious to use.



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1 HOUR AGO iPhone 5 to have 21Mbps HSPA+ data? China Unicom says so

Dell confirms XPS 14z will go on sale in the US in the 'coming weeks'

Remember that XPS 14z Dell teased at IFA? Yeah, well, it's arriving soon. As in, "the coming weeks" soon. The company just confirmed it's on the cusp of shipping here in the states, and while the outfit stopped short of giving a starting price, it's good and ready to talk specs. As we reported last month, it has the same industri...

By Dana Wollman September 29, 2011 12:35PM

30 MINS AGO

iPhone 5 cases and realistic unibody dummy show off incredible slimness

While we're only five days away from finding out the true appearance of the next-generation iPhone, our good friends over at BENM.AT went ahead and crafted their very own unibody dummy using CAD drawings, CNC tools and a block of aluminum -- seriously, that's how they roll! Granted, this work's only based on...

By Richard Lai September 29, 2011 12:13PM

54 MINS AGO

Kobo's Vox Android tablet appears online briefly, gets Canadian release date and pricing

A day after another little-known e-reader manufacturer announced a tablet, a new Android slate from Kobo made a brief online appearance on Future Shop's site, only to be quickly taken down. According to the Canadian retailer, the FCC-approved tablet will offer up a 7-inch display with a 1024 x 600 resolution, WiF...

By Brian Heater September 29, 2011 11:53AM

1 HOUR AGO

Iceland gets a data center to call its own, still believes in fairies

You say Iceland, we immediately think Eyjafjallajökull -- and no, we haven't had a narcoleptic collapse upon these very keys. It's been over a year since that volcano swept the headlines and interrupted air travel, providing outsiders with a skewed

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