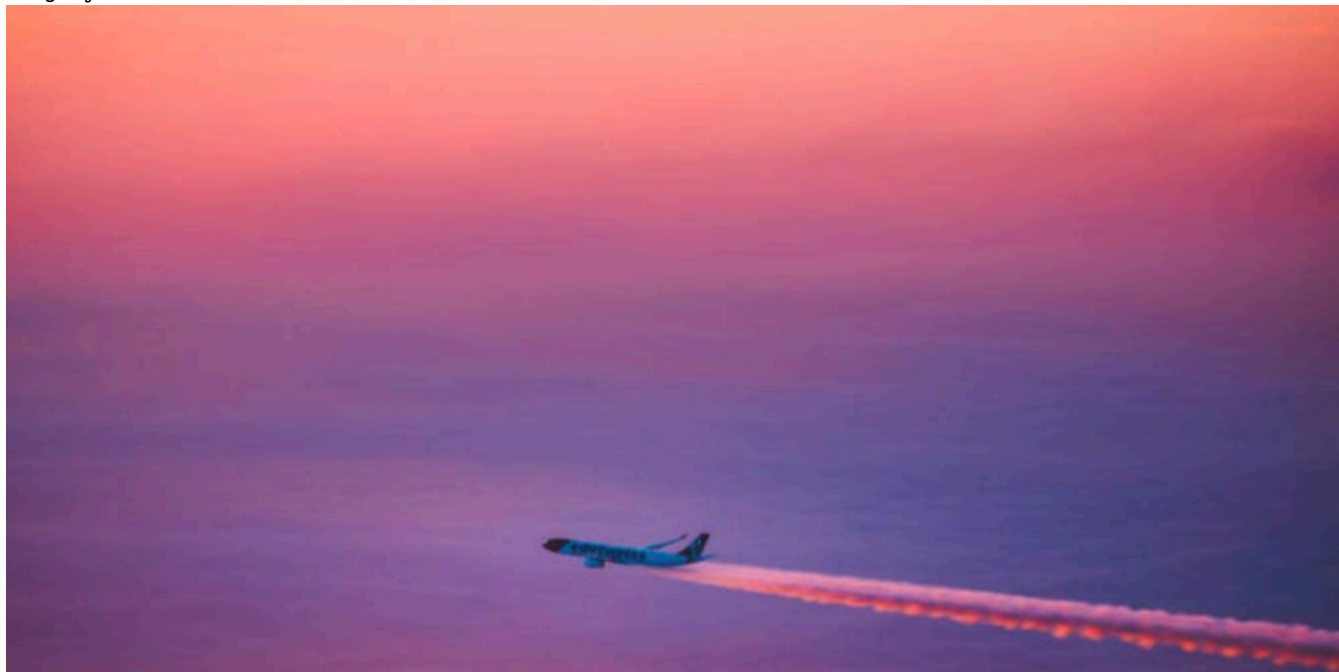


NOTAMs: Creating the solution through community collaboration

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Update: November 1st, 2019: **The Notam Team is up and running** – we’re fixing Notams. Follow our progress at fixingnotams.org.



There cannot be a more agreed upon problem in aviation. **Every single airline, every single flight: the most critical information about that flight is passed to the pilots in the style of a Telegram from the early 1900's.** Coded, abbreviated, often undecipherable, upper case chunks of text: the least human-friendly format imaginable.

A news story in 2013 declared “**Plug pulled on the world’s last commercial electric telegraph system**”.

Shhh. Don’t tell them. Not true. Our NOTAM system is still proudly flying the flag. We use the ITA-2 International Telegraph Alphabet character set from 1924, instead of ASCII, which the rest of the world

switched to in 1963. Ever wonder why Notams are all upper case? That's why. We use Q-codes (from 1909) to categorize the message. We use abbreviations heavily, because it costs more money to send messages in plain text format. Wait, scratch that - that logic ended in the 90's because, well, the internet.

And so, while the passenger is choosing emojis for their last WhatsApp message before the aircraft doors close, in the cockpit the pilot is deciphering what the impact of this Telegram might be ☹️:

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A4732/19 NOTAMN Q) LIMM/QOBCE/IV/M/A/000/999/4526N00916E005 A) LIML B)
1907040000 C) 1907172359 E) REF AIP AD 2 LIML 3-3 NEW OBST ERECTED TWO
CRANE RWY35 PSN 5943.8M AFTER THR35 AND 172.1M RIGHT RCL ON TAKE OFF
DIRECTION COORD (WGS-84): 453022.0N 0091555.0E MAX ELEV AGL 69.2M/227.0FT
MAX ELEV AMSL 185.7M/609.3FT ROTATING JIB 77M ICAO SIGNAL UNPROVIDED.
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☹️. If that seems tough to get through, now consider what 50 pages of it looks like:



That is the average size of the Notam Briefing package that each crew is given. And so, your job as a pilot at briefing time, is to **find the one Notam that will end your career or endanger the aircraft**, in a package the same size as a short novel. Buried deep in Birds of Bangkok, War and Peace by Greece and Turkey, Unlighted Tiny Obstacles, Goat grazing times, Grass cutting timetables - is a runway closed, a diversion airport unavailable, a decision height changed. And you'll miss it.

Air Canada 759 missed the one telling them that 28R was closed in San Francisco, so they tried to land on the taxiway. Only an alert United crew prevented the worst crash in American history, and then only by 14 feet, or 1 second. That led to the NTSB to declare "Notams are Garbage".

From the Final NTSB Report: "Concerns about legal liability rather than operational necessity, drive the current system to list every possible Notice to Airmen (Notam) that could, even under the most unlikely circumstance, affect a flight. The current system prioritizes protecting the regulatory authorities and

airports. **It lays an impossibly heavy burden on individual pilots, crews and dispatchers** to sort through literally dozens of irrelevant items to find the critical or merely important ones. When one is invariably missed, and a violation or incident occurs, the pilot is blamed for not finding the needle in the haystack!"

Thank you, Robert Sumwalt, for calling the problem out.

It's not just the volume, or readability - it's the **Mensa-level problem solving skills** required to parse the contents. Answer this question: If you're on Parking Stand 505 Right, can someone else use Stand 503 Left?

```
ZLXY/XIANYANG L0090/17 WHEN STAND NR.501 BE USED, STAND NR.502, 503,
503L, 503R CAN NOT BE USED SIMULTANEOUSLY. WHEN STAND NR.503L OR NR.503R
BE USED, STAND NR.501, 503 CAN NOT BE USED SIMULTANEOUSLY. WHEN STAND
NR.503 BE USED, STAND NR.501, 503L, 503R CAN NOT BE USED SIMULTANEOUSLY.
WHEN STAND NR.505R BE USED, STAND NR.505 CAN NOT BE USED SIMULTANEOUSLY.
WHEN STAND NR.505 BE USED, STAND NR.505L, 505R CAN NOT BE USED
SIMULTANEOUSLY. WHEN STAND NR.505L BE USED, STAND NR.505, 506, 508 CAN
NOT BE USED SIMULTANEOUSLY.
```

If you did figure it out, how long did it take? Now multiply that time by 250, a straw-poll average number of Notams in a briefing. Think this is manageable in the 20 minutes the crew have to brief the flight?

In 2007, the annual count of Notams reached 500,000. This year, 2019, we are on track for 2 million Notams. The problem is intensifying, and rapidly. **We are drowning in the data, but missing the message.** Every change imaginable is stuffed into the system:

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FTTA A1219/16 PASSENGER FACILITIES READ 2 HOTELS AND 4 INNS IN THE CITY
INSTEAD OF 1 HOTEL AND 4 INNS IN THE CITY ASECNA AIP MODIFY AIP 14AD2.3-
02. 13 JUN 10:05 2016 UNTIL PERM.
```

And this Chinese entry is the best one of 2019 so far ...

```
F2298/19 NOTAMN Q) ZSHA/QXXXX/IV/NBO/A/000/999/3014N12026E005 A) ZSHC B)
1905050852 C) PERM E) REF AIP CHINA SUP15/18(2018-5-15)ZSHC AD2.24 -20G,
MORSE CODE OF IXX CHANGE FM 'DOT,DOT', 'DASH,DOT,DOT, DASH', 'DOT,DOT,DOT'
TO 'DOT,DOT', 'DASH,DOT,DOT, DASH', 'DASH,DOT,DOT, DASH', OTHERS REMAIN.
```

Say it out loud.

In 1964, Flight International published a snippet from the FAA, declaring that the Notam system was being revamped, and from March 15th that year only essential, critical Notams would be allowed to remain. **That was 55 years ago.** We've tried, and we've failed, many, many times, to solve the problem.

INNAGE AND OUTAGE, BUT NO GUFF

TWO months ago the FAA announced that it was revising its procedures for issuing Notams in an effort to eliminate much of the useless "guff" which clutters up operations departments all over the world (e.g., "work in progress 20yd north of block 69 and trenching in progress 100ft east of threshold of R/W 27" to quote from recent Ministry of Aviation Notam). As from March 15 the FAA was issuing Notams "only on items which have direct operational

But - enough about the problem. If you are a pilot, dispatcher, or controller, you know only too well the problem, and its impact.

How about we talk about how we find the solution instead?

Let's start here.



I'm gathering a team of people that understand the problem from the user perspective. A team of pilots, dispatchers, controllers, and anyone else that wants to help. A team of people that care about solving the problem because of how it affects us every day, and because we know that one day, we'll be bitten by it. A team motivated by a desire to make this better for our colleagues, and those that will follow us.

We're not fixing it because we have to, but because we want to.

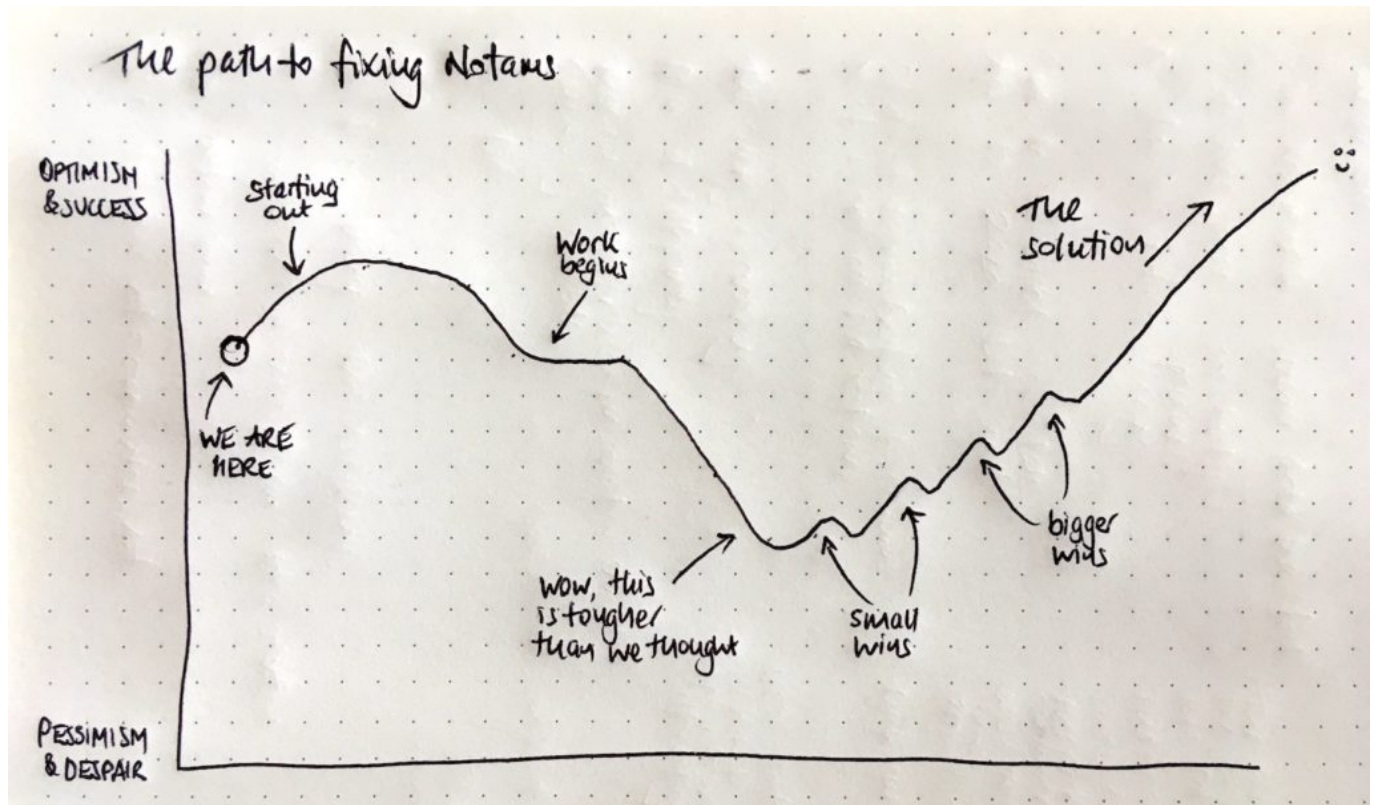
We're not fixing it to make a profit, or because it enhances the bottom line somewhere. We're fixing it because we want it to change.

Most importantly, we're fixing it as a community, collaborating to create the space to allow the solution to come.

Zooming out a little, if we look at this as not an aviation problem, but a communication problem, it becomes less unique, less challenging. Many bigger problems have been solved by looking at them differently.

So we're going to collaborate with smart thinkers, problem solvers, designers, coders, creatives. We're going to work together as people, rather than agencies or companies. We're going to jump into a process that might be messy, challenging, difficult, and will often seem impossible.

As per this handy graph I've drawn:



Don't join us to force change - this is the change. Don't join us to shout louder - this problem is bigger than any one agency or organization. Don't join us if you think this is someone else's problem to fix - **it's our problem, and we'll fix it together.**

The first step is creating the space for this magic to happen. Join us if you have no idea how to solve it yet, but you have positive energy to contribute.

The Notam Team needs you! We start July 1st (yep, you're already late, so jump in). We have set a lifespan of 9 months - do, or die.

The first part of the process is the gathering, the coming together. Once we've all said hello and had a look around, we'll start with the first and most important step - creating that space for the solution. Figuring out how best to collaborate, invite creativity in, think differently. Then, the research - the science, the data, the hard facts. Identify the problem, and the impact. And from there ... well, it's unwritten. Not knowing is part of the approach. Oh, and we're going to have fun. There's no creativity without fun.

I believe the problem is eminently solvable, but only as a community. And I hope you'll join us! If you're in - just write to me at mark.z@ops.group.