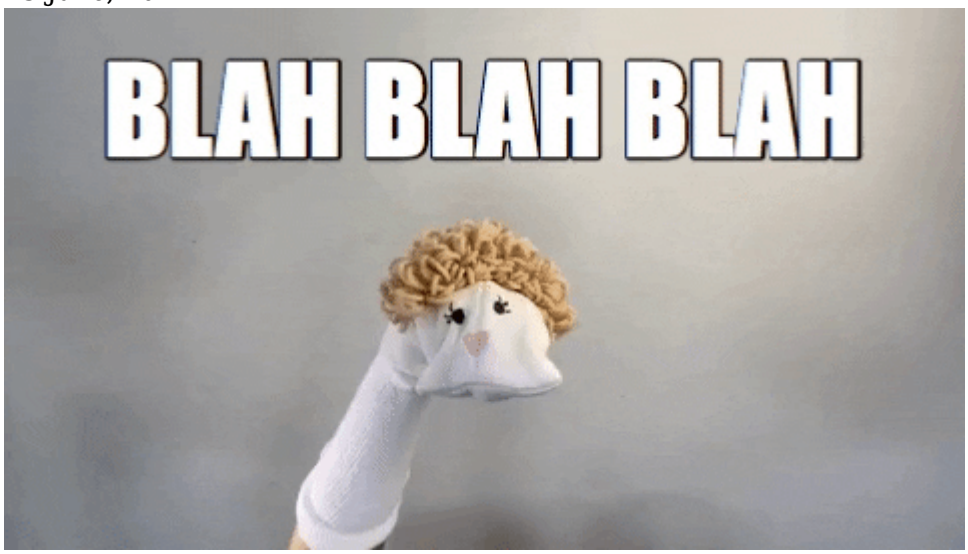
The Art of the Threat Based Briefing

OPSGROUP Team
23 June, 2022



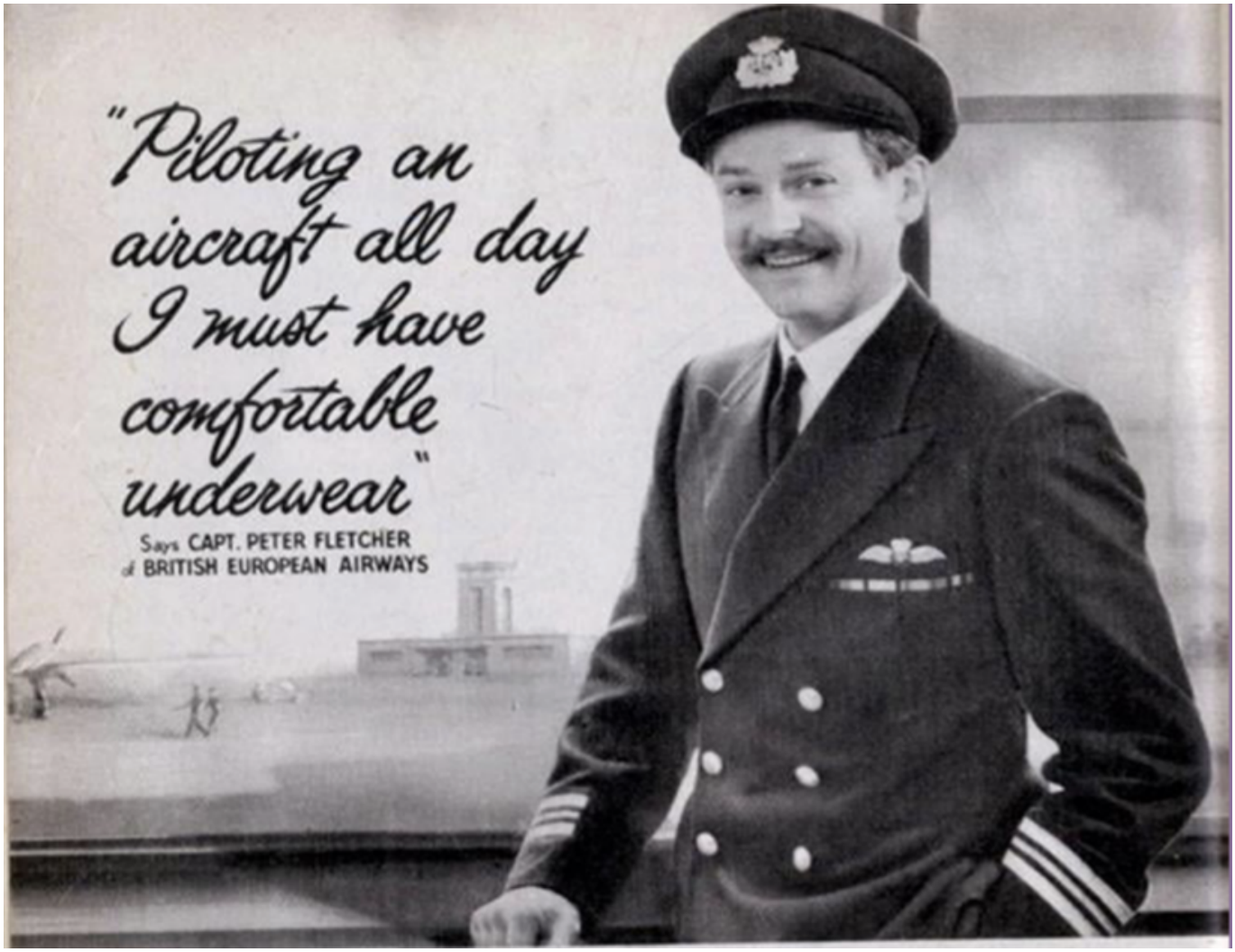
Have your briefings become a *"one-size fits all solution serving as a repository for redundant verbal crew crosschecks of highly automated, highly reliable systems"?*

If the briefings at your operation sound a bit like that, then read on for some suggestions on ways you might fix 'em up…

First up, a reminder of why we brief?

We brief because we want to **try to identify anything that might mess up our flight up,** and work out how to stop it before it gets the chance to. That includes identifying anything silly the other person might be planning on doing, so it's good to include them on it too.

The word 'brief' actually means a bunch of things – *of short duration, a set of instructions, underwear* – which all seem fairly appropriate to what we are using it for (underwear being the inner line of support, defence and protection when things get really scary…)



Briefs are important.

So, what do we want our brief to contain?

We want our briefing to cover **any threats and possible errors** we spot out in the big wide world, and we also want it to involve some ideas on how to mitigate against these.

If you're not sure then we find this list handy. If you say yes to any of these, talk about it:

- Does something feel **scary?**
- Does something look **hard?**
- Does anything seem **weird?**
- Is there a chance you'll do something **stupid?**

And what don't we want it to contain?

- Too much waffle.
- Too much explaining 'how to fly' to the person next to you (they probably know already).
- Stating the obvious or listing SOPs that you both know anyway.

- A plan for absolutely everything possible, including what to do if a Pterodactyl attacks. It just isn't necessary.

Any of these will definitely result in your co-pilot shutting off and not listening even to the bits you do need them to hear.

So how do we do this?

Well, we can play a sort of 'I-Spy' game.

"*I spy with my little eye, something beginning with M."*

"Merr.. Muu…Maaa…Mountain?"

"Yes, one point to the co-pilot!"

Or we can be a little more structured about it and **follow a method** which helps remind us of the big stuff to look out for. We have one to share, which is summed up in the nice tidy acronym: **C-TWO-F-U.** You might like it, you might not. But here it is.

C is for Charts

We probably want to take a fairly close look at these since they are what we need to follow, and they often lay out some of the big threats for us.

Taxi charts, arrival, departure, approach charts… A quick **confirmation of the date** to make sure it is the valid one is important, but after that really you are looking to do two things here:

1. **Look for anything unusual, threatish or dangerous on the charts.** A lot of them include some really useful little notes actually.
2. **It is no good briefing a chart to death if it isn't what you then fly.** A confirmation that what you're talking about is what you've programmed into the box (tracks, altitudes, speed constraints etc) is also important. Think of it as briefing your airplane too.

KASE/ASE
ASPEN-PITKIN CO/SARDY

JEPPESEN

29 OCT 21

ASPEN, COLO
CAT A, B & C **LOC DME-E**

ATIS (ASOS when Twr inop)	*ASPEN Approach (R)		*ASPEN Tower	*Ground
120.4	123.8	119.8	CTAF 118.85	121.9

LOC	Final Apch Crs	DOYPE	MDA(H)	Apt Elev 7838'
151°	151°	11700'(3863')	Refer to Minimums	

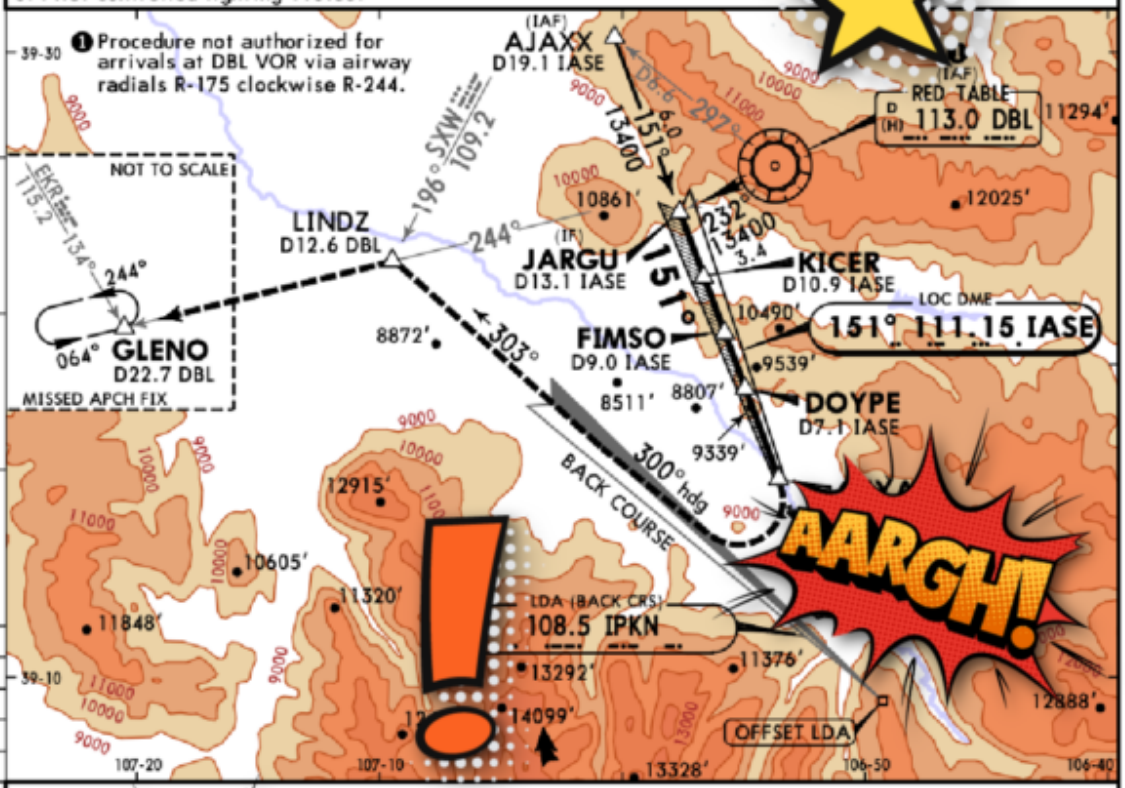
MISSED APCH: Climbing RIGHT turn to 14000' on heading 300° and [illegible] localizer NORTHWEST course (303°) to LINDZ/D12.6 DBL and on DBL VOR R-244 to GLENO/D22.7 DBL and hold.

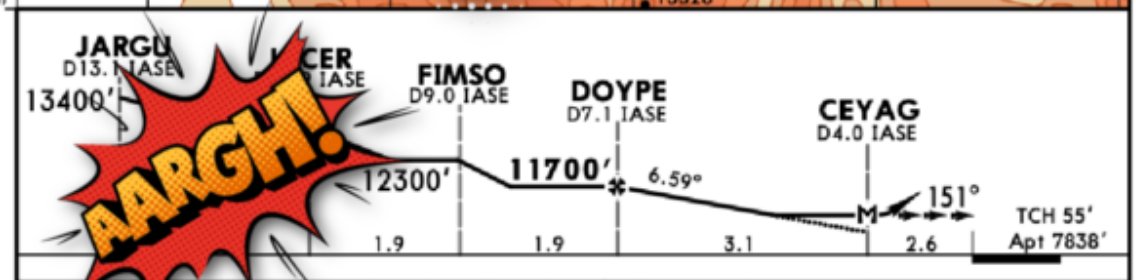
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000'

1. Dual VHF navigation receivers required. 2. Procedure not authorized at night. 3. VGSI and descent angles not coincident. 4. IPKN back course outbound is normal sensing. 5. Cold temperature altitude correction required at or below -22°C. 6. Pilot controlled lighting 118.85.

100 200° 15,700

MSA DBL VOR





Gnd Speed Kts		70	90	100	120	140	160
Descent Angle	6.59°	819	1053	1170	1404	1638	1872
MAP at CEYAG							

Lighting - Refer to Airport Chart | 14000' RT on 300° hdg and IPKN 108.5 NORTHWEST 303°

CIRCLE-TO-LAND
Circling not authorized for CAT C southwest of Rwy 15-33

	Max Kts	MDA(H)
A	90	9840'(2002') -3
B	120	10220'(2382') -3
C	140	10960'(3122') -3
D		NA

TERPS AMEND 1C 20 SEP 2012

CHANGES: Airport elevation, minimums, topography.

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To be honest, a bad example because everything on here is horrifying and worth pointing out.

T is for Terrain

Why does terrain get its own section? Well, because it's big and if you get it wrong it's nasty. **C-FITs (Controlled Flight Into Terrain) are one of the biggest common accident types.** From 2001-2020, CFIT accidents were the second largest category (21%) behind LOC-I (33%).

So, take a look at the terrain and more importantly what it might do to you.

- Turbulence.
- Weird turns required.
- Mega RODs (after you're over it).
- Constraints on the way out. Or the way in for that matter.
- High elevation.
- Climb performance problems.
- Missed approach gradient problems.

But remember – don't just scare the pilot next to you with a list of horrifying 'death threats' – try to explain how you reckon you should deal with it all as well.

W is for Weather

Another big one. **Review it for that specific flight**. No point talking about wind shear if it's a lovely calm day – what would be the point?

It isn't a lovely calm day? Well, whatcha gonna do about it? Which heading do you want to avoid that mega storm? Do you maybe want to run the performance again since the runway is covered in ice?

O is for Operational

You might have covered some of this earlier so don't go re-listing it all again. Here are some ideas though:

- **Aircraft:** Talk about any MELs, CDLs, random or specific procedures you might have to consider for *that flight.*
- **Airport:** Are there any NOTAMs, specific procedures (Noise Abatement Procedures perhaps?), altimeter setting procedures (metric, or low transition alts)?
- **Crew:** Talk about yourselves, any threats there? I like to mention things like how irritable I might be because I didn't have lunch.
- **How you'll fly it all:** Share your autopilot usage plans and stuff like that.
- **Performance:** A good time to check this and make sure you've done it, and you've set it up in the box properly in terms of speeds, flex, all that stuff.

F is for Fuel

Check you have what you wanted and check it's still what you need.

U is for yoU?

I added this in because I thought ‘FU’ sounded funny. Really this is just a last *“any questions?”* Or a *“anything I’ve missed* that yo**U** can think of?” moment.

For your safety
Für Ihre Sicherheit
Pour votre sécurité
Mo to haumaru

PILOT SAFETY CARD

C-TWO-FU BRIEFING

Please print this card. Put it in places. Feel free to remove it and use it if you find it!

OPSGROUP

C - CHARTS

CONFIRMATION
MAKE SURE DATES ARE CORRECT

CHART VS BOX
ARE YOU BRIEFING WHAT YOU'RE FLYING?

THREATS
WHAT DO YOU SEE THAT'S DIFFERENT OR UNUSUAL?

STRATEGY
WHAT ARE YOU GOING TO DO ABOUT IT?

T - TERRAIN

OPERATIONAL
THE OPERATIONAL BITS LIKE CONSTRAINTS

SAFETY
GETTING OVER IT, AVOIDING IT, THE RISK OF NOT...

OTHER THREATS
OTHER THINGS LIKE TURBULENCE, ELEVATION..

STRATEGY
HOW ARE YOU GOING TO DEAL WITH IT ALL?

W - WEATHER

PERFORMANCE
TAKE OFF AND LANDING

SAFETY
WIND SHEAR, STORMS, GUSTS, ICE/SNOW...

PROCEDURES
ANY SPECIFIC PROCEDURES OR LIMITATIONS?

STRATEGY
WHAT ARE YOU GOING TO DO ABOUT IT?

O - OPS

AIRCRAFT
MELs, CDLs, RANDOM OR SPECIFIC PROCEDURES?

AIRPORT
NOTAMS, PROCS (NABT, ALTIMETER SETTING), OTHER TRAFFIC IN AREA?

THE PLAN
THE OVERALL PLAN - HOW YOU'LL FLY IT (AUTOPILOT?)

CROSSCHECKS
A GOOD TIME TO CHECK EVERYTHING YOU'VE SAID IS SET UP

F - FUEL

WANTED?
WHAT DID YOU ASK FOR?

NEED?
DOES IT MATCH THE FPLN, LATESTS CONDITIONS ETC

HAVE?
DOES IT ALL ADD UP?

U - YOU

YOU?
HAVE YOU SEEN ANYTHING?
KEEP IT INTERACTIVE!

DON'T BE BORING.
DON' T TALK ABOUT STUFF YOU DON'T NEEED TO TALK ABOUT.

Here’s something we made for you. Click on it for the printable one.

How do we brief?

If we do the briefing out loud then it definitely helps – few of us are mind readers. If you make it **interactive** – well then now you've got two pilots both thinking about it and working it out together. Bonus.

I said it before, a quick reminder again – a good threat based briefing is about **identifying threats specific for that day, for that flight, and then coming up with strategies for preventing them.**

What?: *A steeper than normal approach gradient? Ok, great, spotted it.*

Why?: *That could be a threat to our stabilisation and speed control. So what to do about it?*

How?: *Configure early, get the PM to keep an eye on that speed, be prepared to go-around if it becomes unstabilized.*

Any other methods?

Airbus have recently changed their recommended briefing method and it is now super simple. All SOPs, standard stuff, checks etc are out, and the briefing now follows this format:

PM: Begins the briefing with the general **plan** – runway, SID, stop altitude and any extra fuel

PF: Talks through the general **strategy** – how to get to the runway (including any taxi hotspots), how to fly the SID (use of automation), any Notams or operational stuff to affect it all, and any other relevant stuff specific for that flight on that day.

PM: Raises any **threats** they spot

PF: Talks through how to **mitigate** those threat.

Watch it in action here (and you don't have to be Airbus to use this!)

Brief done!

That's the why, the what and the how…

A decent threat based briefing any time you head in or out of any airport is important. If you've just been there earlier that day, maybe don't repeat the whole thing all over again though.

And what about when you are heading to an airport you are not familiar with? At Opsgroup we like to put together **Airport Lowdowns.** These are briefing aids that you might find handy because they include information from other members (other people who have been there before!) to try and give you a heads up on what to expect.

They are just trying to capture some of those Big Threats that you might want to think about and talk about in your briefings. You can find them in the Documents Library on your Dashboard, but if you want email us and we'll see if we can put together one for you.

The Lowdown on:	VHHH/HONG KONG	Hong Kong CHINA

THE BASICS	**HOURS:** H24 **TIMEZONE:** UTC+8 **PERMITS/SLOTS:** YES **RUNWAYS:** 07L/25R 12,467FT / 3800M x 60M ILS CAT II / ILS CAT III 07R/25L 12,467FT / 3800M x 60M ILS CAT II / ILS CAT II **FACILITIES:** MAJOR MAINTENANCE / HANDLING / FUEL / CUSTOMS
THE BIG	**TERRAIN - CLIMB GRADIENT CONSIDERATIONS. COMPLEX MISSED APPROACH** **LOW PLATFORM ALTITUDES - 1600FT** **FREQUENT ILS SIGNAL INTERFERENCE** **FREQUENT WIP AT AIRPORT**
THE OPS	**ARRIVAL:** EXPECT TRACK SHORTENING. EXPECT ATC RESTRICTIONS IN DESCENT. **APPROACH:** STRICT SPPED AND ALTITUDE RESTRICTIONS. **COMMS:** DO NOT MISTAKE ATC INSTRUCTION "CANTO HOLD" FOR "CANCEL HOLD". RT FROM OTHER AIRCRAFT CAN BE BELOW STANDARDS. **DEPARTURE:** ENSURE YOU WILL REACH CRUISE ALT BY TMA BOUNDARY.
THE ALTERNATES	**VMMC/MACAU** *H24* 16/34 11,024'/3360m LOC DME (16) / ILS CAT II (34) **ZGGG/GUANGZHOU** *H24R* 01/19 11,811'/3600m ILS CAT I 02/20LR 12,467'/3800m ILS CAT I **RCTP/TAIPEI** *H24* 05L/23R 12,008'/3660m ILS CAT II 05R/23L 12,467'/3800m ILS CAT II
THE ENVIRONMENT	**PRECIPITATION:** RAINY (TYPHOON) SEASON APR-SEP **IMC:** EXTREME SEASONAL VARIATION. **WIND** VARIABLE DIRECTION AVG 16KTS. TURBULENCE COMMON **TEMPS:** HIGHS OF 32°C / LOWS OF 14°C HIGH HUMIDITY
THE CONTACTS	**ATIS:** 128.2 **AIRPORT (ADMIN):** +852 2181 8888 **HANDLING:** FASTRANSIT +86 10 6457 6590 / operations@fasttransit.com.cn ASA GROUP +852 2975 8042 / ops@asag.aero CLOUDJET +86 10 6040 8141 / ops@cjetclub.com
THE OTHER	**CHINA:** HONG KONG DO NOT USE METERS AS MAINLAND CHINA DOES. CAUTION DIVERSIONS TO CHINESE MAINLAND AIRPORTS. **EQUIPMENT:** RNP1, ADS-B REQUIRED

The Lowdowns look like this

Further Reading

- Here's the article on how arrival and departure briefings might not be up to scratch, which sparked the lightbulb for us with our article.