LEVANTAMENTO DE PADRÕES LÉXICO-GRAMATICAIS DO INGLÊS PARA AVIAÇÃO: UM ESTUDO VETORADO PELA LINGUÍSTICA DE *CORPUS*

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O INGLÊS PARA AVIAÇÃO

AVIATION ENGLISH

The sole object of ICAO language proficiency requirements is aeronautical radiotelephony communications, a specialized subcategory of aviation language corresponding to a limited portion of the language uses of only two aviation professions — controllers and flight crews. It includes ICAO standardized phraseology and the use of plain language.

3.2.7 DOC 9835 (ICAO, 2010)

PLAIN ENGLISH

Plain language in aeronautical radiotelephony communications means the spontaneous, creative and noncoded use of a given natural language, although constrained by the functions and topics (aviation and non-aviation) that are required by aeronautical radiotelephony communications, as well as by specific safety-critical requirements for intelligibility, directness, appropriacy, non-ambiguity and concision.

3.3.14 DOC 9835 (ICAO, 2010)

GLOSSÁRIO DE ESTRUTURAS BÁSICAS

- Articles

- Adverbs of frequency (*always, generally, usually, often, sometimes, seldom, never, etc.*)

- Comparison of adjectives

- Discourse markers (*actually, basically, anyway, (and) yeah (more and more frequent), listen, I mean, let's see/let me see, like, oh, now, okay, so, well, you know, you see, you know what I mean, it is true, of course, but, still, (and) by the way, besides, another thing is, on top of that, so, then, first(ly), second(ly), etc., first of all, in the first/second place, finally, in the end, in short*)

- Modal verbs (*can, may, must, have got to, should, ought to, would, could, might, needn't, don't have to, mustn't*)

- Passive voice

- Simple present

- Simple past

- Position of direct and indirect objects:

Bob sent some flowers to his girlfriend.

Bob sent his girlfriend some flowers.

REVISÃO DA LITERATURA

- **Linguística de *Corpus***

- Descrição da linguagem autêntica

- Fraseologismos (tendência que as palavras

têm de caminhar juntas e formar significado por

meio de suas combinações) – léxico-gramática

- probabilidade x possibilidade (comunidade

linguística)

- SINCLAIR: princípio idiomático x livre escolha

- ***Corpora* falados**

- gramática própria

- contextos imediatos – aqui e agora

- **Teoria da Língua em Ato**

  - identificação das unidades de

  referência [como] "a principal

  informação adicionada para a

  análise linguística de um *corpus*

  falado" (MONEGLIA; CRESTI,

  2006, p.91)

O CORPUS

DIFICULDADES

- Que áudios coletar?

    - Como definir o que é um texto (início e fim) para essa compilação / transcrição?

        - Como transcrever?

            - Como identificar o falante? E a questão 'nativo' e 'não-nativo'?

                - Como separar a Fraseologia Aeronáutica do '*plain English*'?

                    - Como balancear o *corpus*?

                        - Qual será o tamanho do *corpus*?

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Time (GMT)	Subject	Member Name
2014-11-07 00:12:55	UAL925 smoke in cockpit and cabin, diverted to Dublin	oktalist
2014-11-03 05:03:36	Request for pilot reports of UFOs	matt68
2014-11-02 05:33:55	Here's how not to do practice approaches	StuSEL
2014-10-30 19:28:35	Re: Funny? or Dangerous?	svoynick
2014-10-27 21:23:22	Philly Tower Yesterday...	DASFlies
2014-10-23 01:41:25	so excited about climbing to 6000	keith
2014-10-15 00:25:37	Nieuport 11 incident at CYYJ	bcradio
2014-10-12 03:43:18	IWA Tower coaches ATP Seminole student throughout the taxi	kcmeyers
2014-10-06 18:22:14	Green Laser Phase on Aircraft	usernil
2014-10-05 01:34:14	AMX18 at KLAX - Aborted Takeoff	cptbrw
2014-10-05 01:31:07	JBU683 at KJFK - Bird Strike	cptbrw
2014-10-03 20:24:29	IWA Tower discusses FAA Hiring Changes	kcmeyers
2014-10-01 03:23:05	Ottawa (CYOW) reopens Runway 14/32 after several months of construction	janlam01
2014-09-22 14:26:04	SWA1704 Diverts to KLAX	ronr530
2014-09-19 01:44:34	FLL south runway (10r-28l) (Questions before it opens)	swa4678
2014-09-19 01:29:28	FLL south runway (10r-28l) (JBU1028 - first arrival)	swa4678
2014-09-18 23:44:08	NYPD Helicopter Reports Near Miss with Drone	dorough
2014-09-18 19:29:47	JBU1416 Emergency Return to KLGB	swa4678
2014-09-18 18:58:04	KLGB clearance controller loving his job	swa4678
2014-09-16 20:19:18	Re: AA182 Medical Divert to Tokyo Haneda	SQK7700
2014-09-15 22:41:39	WestJet 373 stuck mic on Tower Frequency (CYOW, Ottawa)	janlam01
2014-09-12 23:51:22	Pilot reports drone at Nashville Intl KBNA	dorough
2014-09-12 22:30:42	KOAK - Piper mistakenly lands on Taxiway	zyuzin4
2014-09-07 01:12:04	TBM Military Comms	captkel
2014-09-06 04:44:05	N900KN trouble call edited - 6.75 min	airmaneric
2014-09-05 19:19:43	Re: Military Fighters chasing Private Plane with Unconscious Pilot (just happened)	gillmores
2014-09-05 17:20:26	Military Fighters chasing Private Plane with Unconscious Pilot (just	au8tor172

O TEXTO

<ATC> Delta ten sixty-three / fly runway heading one eight five / contact departure / good day //

<pilot> uh Delta ten sixty-three has had an engine failure on the right engine / declaring an emergency due to a bird strike //

<pilot> sir / Delta ten sixty-three? //

<ATC> heading straight ahead / contact Departure one three five point niner / we´ll get you straight back in //

<pilot> okay / heading straight ahead / Delta ten sixty-three //

<pilot> alright // Departure / Delta ten sixty-three / we have declared an emergency / engine failure on the right engine / request visual return back to one three right //

<ATC> Delta ten sixty-three / alright / just maintain two thousand and turn right heading two seven zero //

BALANCEAMENTO E REPRESENTATIVIDADE

	Termo	Sigla
Primary (15)	*Abnormal runway contact* [contato anormal com a pista]	ARC
	Birdstrike [colisão com pássaro]	BIRD
	Controlled flight into or toward terrain [Colisão controlada contra o solo]	CFIT
	Collision with obstacle(s) during take-off and landing [colisão com obstáculo durante a corrida na pista]	CTOL
	Fire/smoke (non-impact) / [Fogo ou fumaça – impacto não é a causa]	F-NI
	Ground Collision [Colisão em solo entre aeronaves ou aeronave com veículos]	GCOL
	Loss of control – inflight [Perda de controle em voo]	LOC-I
	Airprox/ ACAS alert/ loss of separation/ (near) midair collisions [Quase-colisão em voo / Alerta de TCAS]	MAC
	Ground Handling [Serviços de solo] (a sigla RAMP se deve à área de movimentação de aeronaves, chamada de *ramp*, ou *apron* – pátio, em português)	RAMP
	Runway excursion [Excursão de pista]	RE
	Runway incursion- wildlife presence [Incursão de pista por animais]	RI-A
	Runway incursion - vehicle, aircraft or person [Incursão de pista]	RI-VAP
	System/component failure or malfunction (non-powerplant) [Pane de sistema que não o motor]	SCF-NP
	Powerplant failure or malfunction [Pane de motor]	SCF-PP

Taxonomia de Categoria de Ocorrência (ICAO, 2006)

ARMAZENAMENTO

Nome do arquivo	Tempo de áudio	Número de tokens	Número de tokens por categoria
ARC_ExpressJet145	0:03:08	411	
ARC_AC5482	0:02:50	666	
ARC_UA870	0:02:02	333	1410
BIRD _Delta1073	0:07:46	1593	
BIRD_AWE739	0:04:37	747	
BIRD_CACTUS1549	0:03:08	463	2803
CFIT_Asiana	0:07:19	549	
CFIT_UPS	0:05:31	621	
CFIT_Cessna	0:03:38	650	1820
CTOL_ N9409E	0:08:33	1766	
CTOL_PHLengine cowl	0:01:58	383	
CTOL_Pinnacle Airlines	0:12:08	2365	4514
F-NI_AAL963	0:01:36	298	
F-NI_ACA101	0:08:20	586	
F-NI_Acey 5828	0:03:59	918	
F-NI_Delta30	0:04:39	611	2414

NATIVOS OU NÃO-NATIVOS?

Nativo: 17,48%

Não-nativo: 17,07%

N	Word	Freq.
1	THE	95
2	YOU	74
3	TO	67
4	RIGHT	48
5	RUNWAY	46
6	WE	45
7	I	40
8	AND	37
9	IT	37
10	UH	37
11	OF	36
12	IS	33
13	ON	31
14	THAT	30
15	AIRPORT	27
16	A	25
17	AT	24
18	IN	23
19	JUST	22
20	RE	20

N	Word	Freq.
1	TO	62
2	YOU	54
3	THE	50
4	RIGHT	45
5	UH	42
6	AND	38
7	WE	38
8	OKAY	27
9	IS	23
10	LEFT	23
11	RUNWAY	23
12	ARE	21
13	AT	20
14	HEAVY	19
15	I	19
16	A	18
17	RE	18
18	FOR	17
19	ON	17
20	#	16

OS NÚMEROS

- 92 textos

- 7:26:56 hs de áudio

- 70.323 palavras

- 3,68% riqueza lexical (T/TR)

OS PROCEDIMENTOS DE ANÁLISE

LISTAS DE PALAVRAS

1ª lista gerada

2ª lista gerada (lematizada e com *stoplist*)

LISTA DE PALAVRAS-CHAVE

N	Key word	Freq.	%	Texts	RC. Freq.	RC. %	Keyness	P	lemmas	Set
1	BE	2.43	3,46	65	10.9	0,62	4.12	0,00		
2	RUNWAY	611	0,87	81	2		3.97	0,00		
3	LEAVE	516	0,73	8	290	0,02	2.35	0,00		
4	HEAVY	368	0,52	35	84		1.98	0,00		
5	HEAD	432	0,61	10	324	0,02	1.82	0,00		
6	TURN	373	0,53	66	312	0,02	1.52	0,00		
7	CLEAR	343	0,49	35	322	0,02	1.35	0,00		
8	SIR	195	0,28	60	20		1.14	0,00		
9	AIRPORT	184	0,26	39	8		1.13	0,00		
10	APPROACH	265	0,38	48	195	0,01	1.12	0,00		
11	LAND	237	0,34	56	129		1.08	0,00		
12	MAINTAIN	193	0,27	42	53		1.01	0,00		
13	THANK	300	0,43	70	510	0,03	937,	0,00		
14	#	386	0,55	89	1.09	0,06	915,	0,00		
15	AIRCRAFT	150	0,21	50	10		908,	0,00		
16	GO	593	0,84	74	3.40	0,19	793,	0,00		
17	EMERGENCY	133	0,19	47	18		762,	0,00		
18	HOLD	222	0,32	51	345	0,02	721,	0,00		
19	TAXI	106	0,15	34	3		667,	0,00		
20	AIR	160	0,23	21	129		660,	0,00		
21	WE	1.20	1,71	88	12.9	0,72	655,	0,00		
22	DESCEND	98	0,14	30	0		641,	0,00		
23	FLY	125	0,18	40	42		633,	0,00		
24	ENGINE	114	0,16	25	24		621,	0,00		
25	SHORT	151	0,21	38	176		551,	0,00		
26	FUEL	105	0,15	31	31		544,	0,00		
27	WILL	407	0,58	48	2.44	0,14	517,	0,00		

Item lexical	Frequência
RUNWAY	611
AIRPORT	184
AIRCRAFT	150
EMERGENCY	133
ENGINE	114
FUEL	105
VEHICLE + rescue, truck, equipment, assistance, tug	252
FIRE	64
GEAR + wing, tire, nose, tail, wheel, APU	146
SMOKE	43
PILOT + captain	48

*The Michigan Corpus of Academic Spoken English

Listas de Palavras
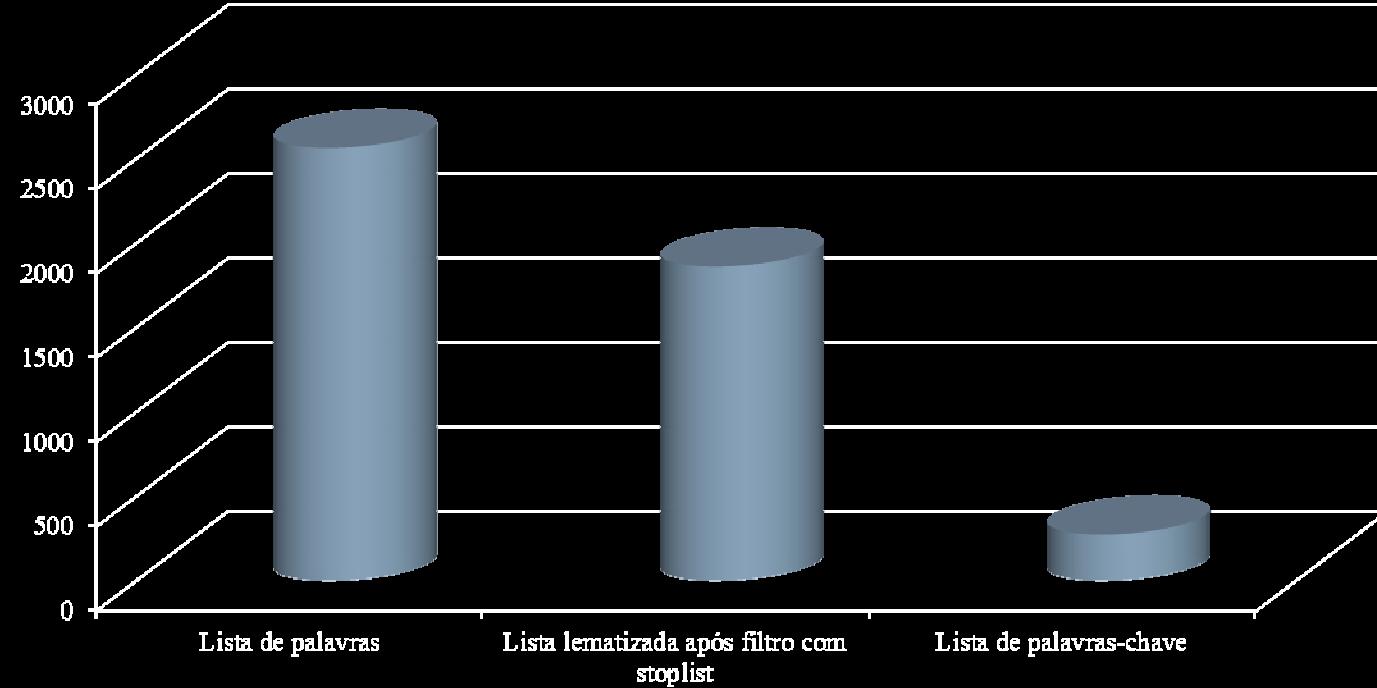
LINHAS DE CONCORDÂNCIA

CLUSTERS

COLOCADOS

runway.cnc

File Edit View Compute Settings Windows Help

N	Word	With	Relation Set	Texts	Total	Total Left	Total Right	L5	L4	L3	L2	L1	Centre	R1	R2	R3	R4	R5
1	RUNWAY	(runway)	0,00	81	616	4	4	2		1	1		608		1	1		2
2	THE	(runway)	0,00	60	232	213	19	12	18	7	25	151			3	3	6	7
3	RIGHT	(runway)	0,00	46	139	14	125	2	2	6	3	1		1	27	91	5	1
4	BE	(runway)	0,00	45	122	75	47	21	24	20	6	4		17	7	9	11	3
5	TO	(runway)	0,00	55	121	79	42	7	13	16	28	15		4	4	4	21	9
6	ON	(runway)	0,00	45	106	88	18	6	3	6	49	24		5	3	2	5	3
7	LEAVE	(runway)	0,00	43	104	20	84	3	2	7	5	3			22	59	2	1
8	FOR	(runway)	0,00	37	76	50	26	1	9	9	6	25		6	6	6	7	1
9	CLEAR	(runway)	0,00	36	76	45	31	5	7	25	8			1	5	16	5	4
10	YOU	(runway)	0,00	36	73	43	30	13	19	8	3			6	12	8		4
11	AND	(runway)	0,00	47	70	26	44	6	7	3	8	2		10	3	5	18	8
12	OF	(runway)	0,00	29	54	50	4		3	1	16	30			1		1	2
13	UH	(runway)	0,00	26	48	31	17	5	9	3	9	5		2	4		4	7
14	LAND	(runway)	0,00	28	43	24	19		1	3	5	15			2	4	2	11
15	APPROAC	(runway)	0,00	28	42	32	10		1	5	4	22			1	6	3	
16	AT	(runway)	0,00	24	35	11	24	3	1	2	5			6	3	8	6	1
17	HEAD	(runway)	0,00	17	35	2	33		1	1				33				
18	HOLD	(runway)	0,00	23	34	33	1	1	2	21	6	3		1				
19	CROSS	(runway)	0,00	23	33	31	2			3	3	25		1	1			
20	SHORT	(runway)	0,00	20	30	29	1		1	4	19	5		1				
21	WE	(runway)	0,00	18	28	16	12	9	7						2	4	1	2	3
22	A	(runway)	0,00	17	28	17	11	3	8	5		1		1	4	2	1	3
23	CAN	(runway)	0,00	20	27	20	7	4	5	8	3				2	2	1	2
24	GO	(runway)	0,00	16	26	18	8	4	9	5						1	4	3
25	OFF	(runway)	0,00	14	26	23	3		1		18	4		1				2

concordance collocates plot patterns clusters timeline filenames source text notes

07 entries   Row 1   ll be planning to stop on the   for an inspection and u

RUNWAY

Na Fraseologia Aeronáutica (Anexo 10)

runway transmitted as
27 runway **two seven**
30 runway **three zero**

.... off the runway
come
go

...... off the runway
turn
get

dog
debris
aircraft
vehicles

on the runway

on runway

The runway is ....
closed
blocked
shut down
clear
open

EMERGENCY

now, right now, at this time, immediately

- presente contínuo (*we´re declaring an emergency*), verbos de posse (*I, we have, ´ve got*) e o verbo existencial THERE TO BE
- passado ou presente perfeito - causas e consequências

emergency equipment
emergency vehicles
emergency aircraft
an emergency aircraft inbound

AIRCRAFT

tipo da aeronave
aircraft type is a triple seven
what type of aircraft is United ten following?

posição de algo no entorno da aeronave
the tug in front of the aircraft
anybody in the vicinity of our aircraft
on the right side of the aircraft

posição na aeronave
the back of your aircraft
any part of the aircraft
the back door of the aircraft
the left wing of the aircraft

posição da aeronave
aircraft is on the turn to papa
emergency aircraft is on the runway
is the aircraft on final?

finalidades
we're just checking under the aircraft to make sure no fuel
a tow truck to tow the aircraft off back to the runway
have someone to circle the aircraft
people approaching your aircraft to inspect it

modalizações
The aircraft appears to be normal
understand you are able to fly an aircraft
Prefer to land aircraft at destination

situação da aeronave
the aircraft is under control
the aircraft is stable at this time

ENGINE
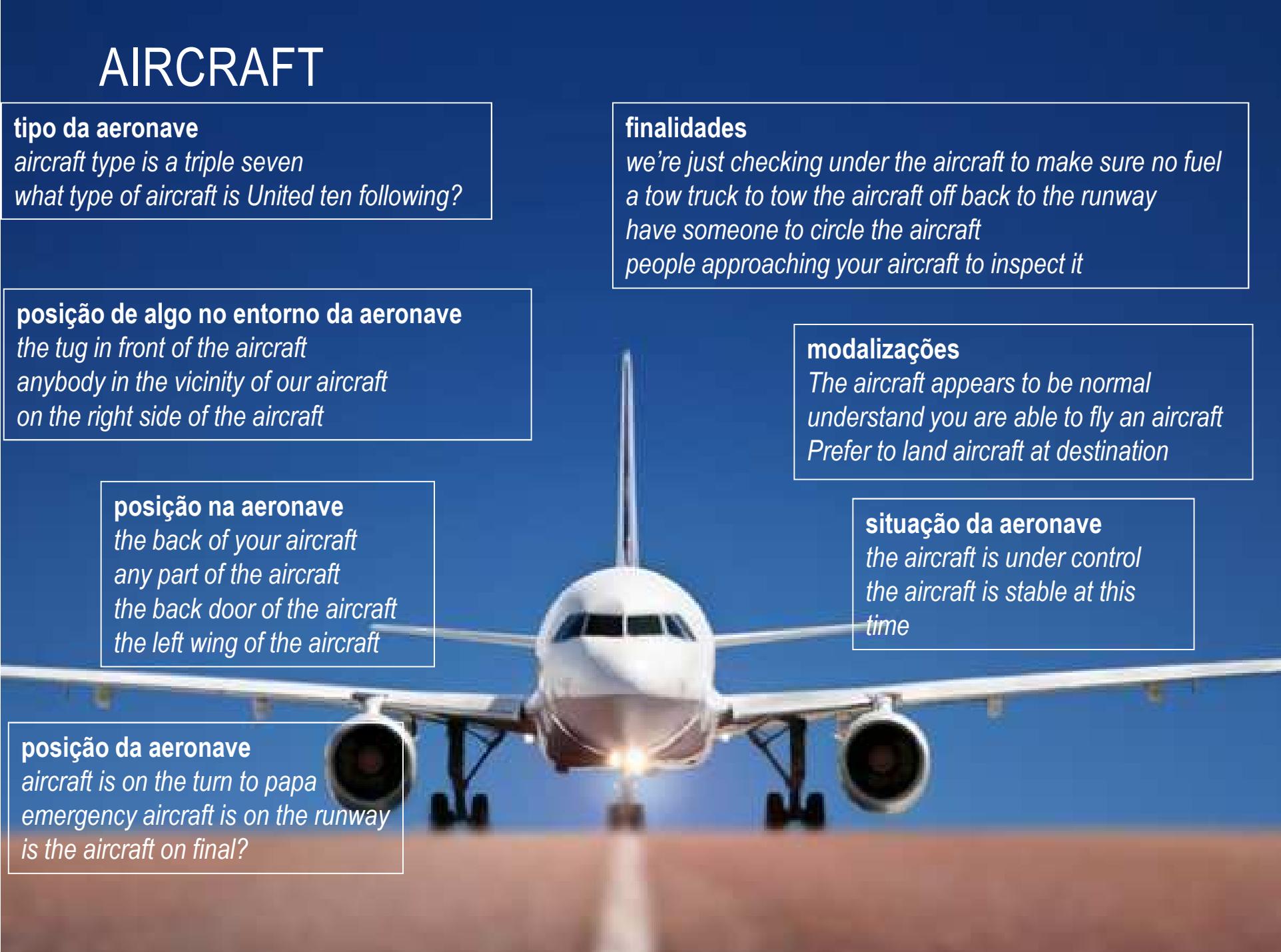
Conjunções

- and
- but
- if
- so
- due (to
- becaus
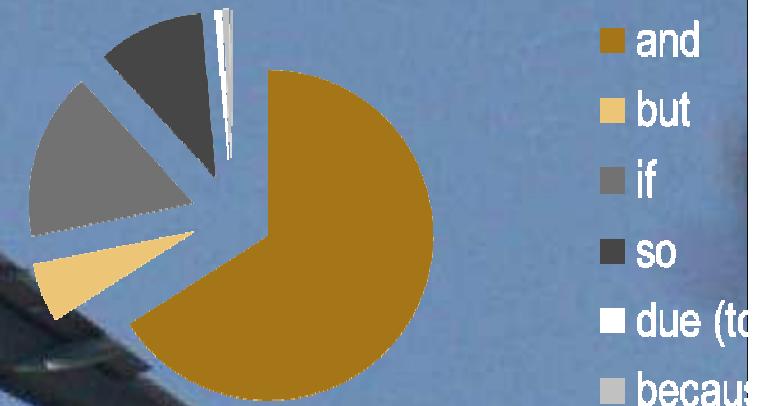
FUEL

Fuel dumping
Fuel leak
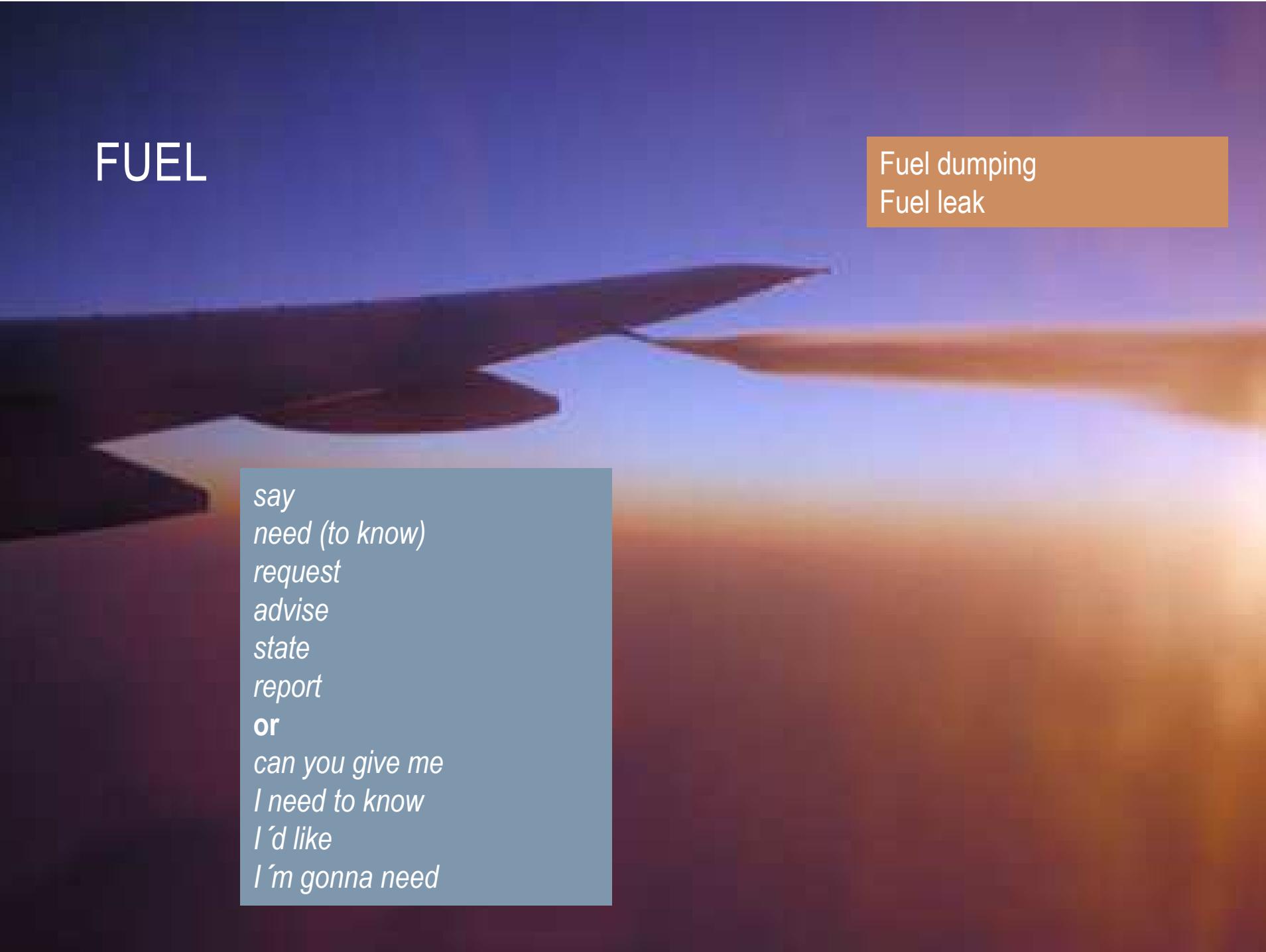
say
need (to know)
request
advise
state
report
or
can you give me
I need to know
I´d like
I´m gonna need

The book is on the table *vs.*
The plane is on the runway

Estruturas do Glossário	Corpus de estudo
Articles	the – 1835 a – 806 an – 147
Adverbs of frequency: Always Generally Usually Often Sometimes Seldom Never	Always – 3 Generally – sem ocorrência Usually – sem ocorrência Often – 1 Sometimes – sem ocorrência Seldom – sem ocorrência Never – 2
Comparison of adjectives	Comparativos curtos – 63 Comparativos longos – 3 Superlativos longos – 2 Superlativos curtos – 16
Discourse markers: Actually	Actually – 20

CONSIDERAÇÕES FINAIS

AS ANÁLISES REVELAM QUE...

- Verbos de ligação / preposições

- Linguagem simples:

  3,68% T/TR

  11 itens lexicais

  seis conjunções (*and*, *but*, *if*, *due to*, *because*, *so*)

  frases interrogativas – formas indiretas seguidas de *let me know, I need to know, can you give me*)

- Verbos frequentes: suporte ou Fraseologia (pres cont, pres simples

  passado, pres perfeito (ações frequentes)

  will / going to

PARA O FUTURO...

- Análise dos outros itens lexicais

- Etiquetagem do *corpus* – estruturas complexas

- Análise das outras áreas linguísticas sugeridas pela OACI

- Estudos pragmáticos

- Pesquisas relacionadas ao reconhecimento de fala nos contextos aeronáuticos

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