



International Civil Aviation Organization

Seventh Symposium and Exhibition
on ICAO MRTDs, Biometrics
and Security Standards

ICAO Headquarters, Montréal, Canada
12 - 15 September 2011



Forensic document examination for evidence of identity



Samiah Ibrahim
Manager, Forensic Document Examination
Canada Border Services Agency

What do we do?

Forensic Document Examination is the:

Objective & independent scientific examination of documents and related materials

And the reporting of our observations and conclusions for court and judicial purposes

In a nutshell...

Forensic document examination is used to show links between documents of any sort and persons, places or events for judicial purposes.

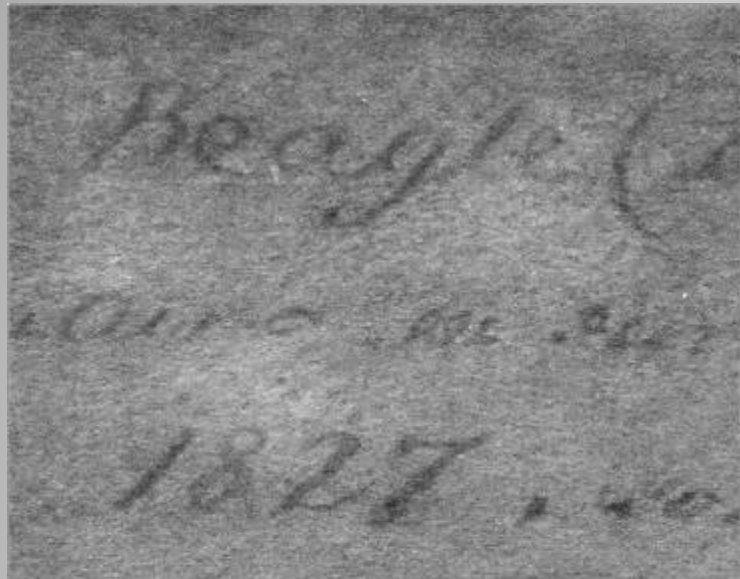
Forensic Document Examination 101

- Authorship of handwriting
 - All types of handwriting
 - Signatures, initials, printing, etc.
 - Natural, simulated, disguised



Handwriting
and
Signatures

Signatures & Handwriting



ation, with a firm reliance on the protection
John Hancock



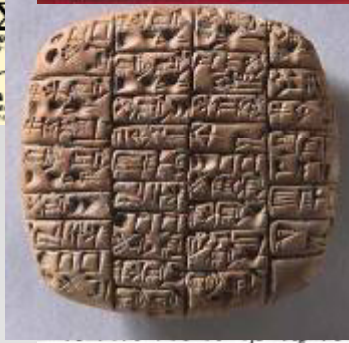
Α	Β	Γ	Δ	Ε	Ζ
Alpha (al-fee)	Beta (bay-tee)	Gamma (gay-gee)	Delta (del-tee)	Epsilon (ep-sil-tee)	Zeta (zee-tee)
Η	Θ	Ι	Κ	Λ	Μ
Eta (ay-tee)	Theta (thay-tee)	Iota (eye-tee)	Kappa (kay-tee)	Lambda (lam-tee)	Mu (moo)

Ν	Ξ	Ο	Π	Ρ	Σ
Nu (new)	Xi (zee)	Omicron (oh-mee-ahn)	Pi (pee)	Rho (ree)	Sigma (sig-nee)
Τ	Υ	Φ	Χ	Ψ	Ω
Tau (tau)	Upsilon (yup-sil-ahn)	Phi (fee)	Chi (chee)	Psi (psig)	Omega (oh-mee-ga)

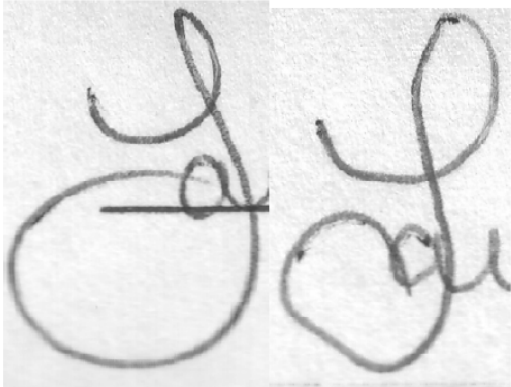
א	'aleph	[ʔ]
ב	beth	[b]
ג	gimmel	[g]
ד	daleth	[d]
ה	he	[h]
ו	vav	[v]
ז	zayin	[z]
ח	heth	[h]
ט	tseth	[t]
י	yodh	[y]
כ	kaph	[k]

⌘	samekh	[s]
ו	'ayin	[ʔ]
ז	pe	[p]
ח	tsade	[t]
ט	qoph	[q]

1	2	3	4	5

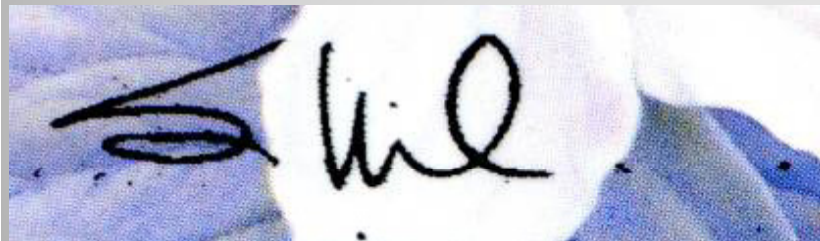


u v w x y z . ? " ' !
 3 4 5 6 7 8 9 10
 k l m n o p q r
 s t u v w x y z
 3 4 5 6 7 8 9 10

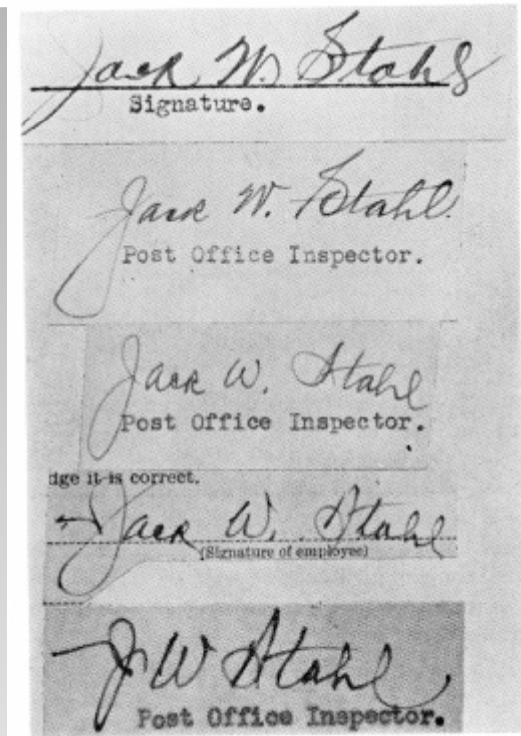


Limited space in a passport signature box affects fluency of writing

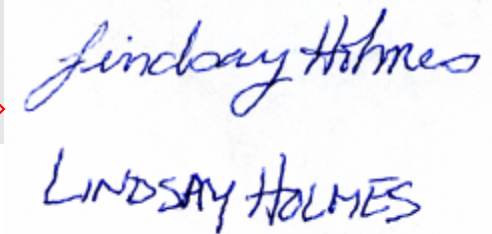
Decreased detail in signature because of image reproduction specifications



Writing on a very rough surface



Natural changes in signature over time



FDE 101 (cont'd)

- Production of documents
- Determination of process(es) used to create the documents
- Determination of make-and-model of machine(s) used
- Assessment of the date of production
- Association of suspect device(s)
- Assessment of genuineness



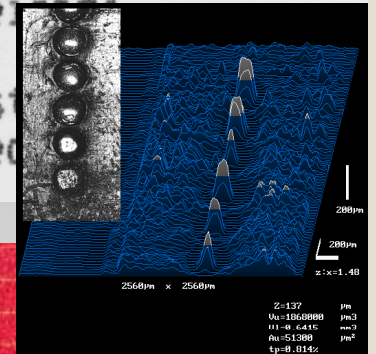
Production of Documents

- Modern office equipment
 - Laser printers
 - Ink jet printers
 - Dot matrix printers
 - Daisywheel printers
 - Photocopier
 - Facsimile documents
- Conventional systems
 - Conventional and electric typewriters
 - Industrial printing processes
 - Wet and dry cachets

le materiel et cela a ses
njointement et solidaire

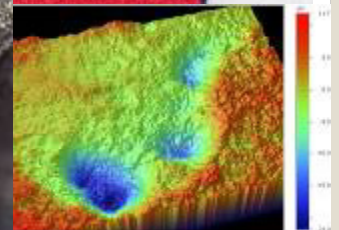


Date and time:
Session Prefix:
Dest:
Quantity:
Weight:
1st
Ked



0 3 9 9

first name and initials
Citizenship:
A.I.L.B. Pearson I.A.
0970
Expiration
Citizenship:



Occurrences to Documents

- Prove or disprove purported dates of execution of documents
- Detect fraudulent or altered documents
- Decipher & restore documents

What is the investigative value?

- Associate people, places or things
 - Same writer?
 - Common origin?
- Establish how things were made or done
 - Documents – all types
 - Business – forms, invoices, bills, etc.
 - Security – currency, bonds, etc.
 - Identity – passports, licences, etc.
 - Papers, inks, etc.
- Confirm or refute scenario

Canada Border Services Agency

FDE Section

- Generically, forensics is a service to investigations of all sorts
- Our mandate includes criminal investigations from a border/immigration context
- But also we are called upon by other federal entities to respond to revenue fraud, and other criminal cases.

Evidence of identity

- In a border/immigration context this means verification that the person and the documents match...
- Secure identity documents are just that, but how to ensure the genuine documents are conferred to the right person?

Pre-emptive forensics

- Earlier involvement
 - Prevent the crimes before they occur
 - Mitigate their impact
- Diversify our portfolio
 - Make linkages between the cases and work from various clients
 - Document integrity
- Globalise FDE
 - UNODC programme
 - Best practices

Sample of casework

- Genuine entry/exit stamp impressions vs. photopolymer reproductions
- Altered genuine passports
- Consultants creating false history documents
- Multiple applications
- Dating of purported genuine documents from mid-1900s



- Forensic document examination is yet another in the arsenal of tools available to confirm/refute identity

samiah.ibrahim@cbsa-asfc.gc.ca



... Thank you

Seventh Symposium and Exhibition on ICAO MRTDs,
Biometrics and Security Standards, 12 to 15 September 2011, Montréal