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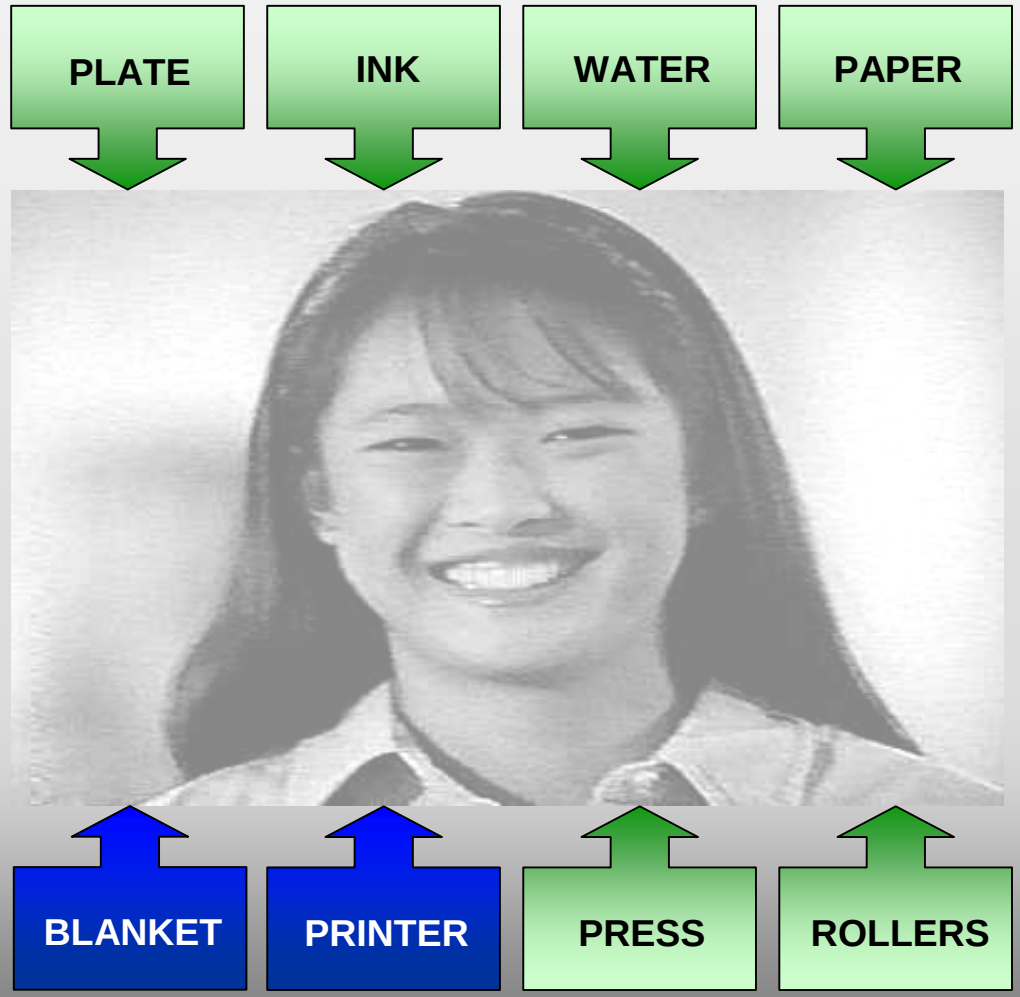
Interference - Source, Cause and Remedy



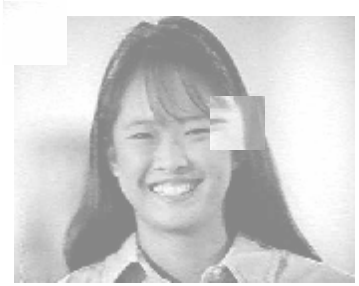
Source: Phoenix AG, Hostmann Steinberg

Beyond the **printing blanket** and **the operator**, there are **more elements** participating in the offset printing process.

The interplay of these elements **decides** whether a **good print result** will be **achieved** at the end of the process.

The next pages will **name the most common problems** occurring during the printing process, **explain the causes** and **advise probable remedies**.

Interference - Source, Cause and Remedy

Interference	Cause	Remedy
Area of Weak Print (appears as broken, weak or area of non print) **Overall Light Print** (lack of desired ink density)  	Improper bearer pressure	Try adjusting of back cylinder setting
	Insufficient packing or back cylinder pressure	Check blanket height, repack or replace
	Packing damaged	Check blanket height, repack or replace, correct packing size (smaller than blanket), seal blanket edges
	Blanket compressed due to smash	Check for smashed area replace blanket & or packing, give time to recover, partial use of blanket repair
	Blanket surface glazed or piled	Clean or replace blanket as necessary - ensure proper washing interval, use proper cleaning solvents
	Loose blanket	Tighten blanket after checking for wrinkles and or creeped packing sheet
	Low spot in cylinder	Press condition...over pack or spot pack
	Plate blinding	Replace/remake plate - less pressure P-t-B
	Too much water / Ink-water balance issue	Adjust ink-water balance - less water
	Wrong surface structure of printing substrate	Change knife of paper cutter, use varnish to bind paper lint or change paper batch
	Low Ink roller pressure	Increase pressure between Ink rollers and plate cylinder
	Ink too stiff or too intensive	Reduce Ink tack by adding print oil or paste or use less intensive ink.

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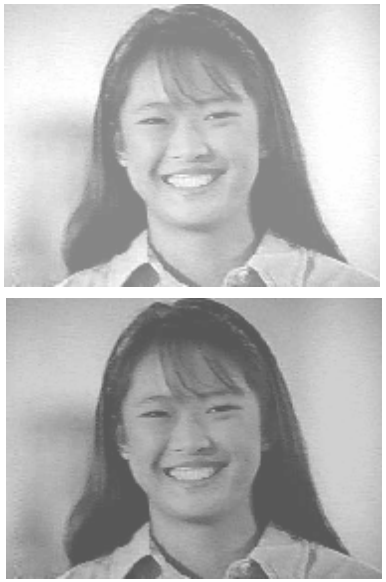
Interference	Cause	Remedy
Filling in (dots enlarged, increase of image in all directions) 	Too much plate to blanket squeeze	Check packing adjust to press and blanket specifications
	Excessive blanket to impression squeeze	check packing of blanket and blanket to impression cylinder pressure and correct
	Blanket packing too soft	vary softness of packing by mixing calibrated papers and calibrated carton, the more carton the harder the packing
	Blanket piled	wash blanket frequently with water and washing solutions, see piling
	Blanket swollen	Use only recommended blanket washes, use deglazers and rejuvenators sparingly, dry blanket thoroughly after washing, change blanket
	Excess ink or emulsified ink	run less ink, verify correct setting of ink-rollers to avoid heat build-up, make ink more stiff, use more intensive inks
	Incorrect form roller settings	Check roller settings, reset if necessary
	Wrong printing substrate	change stock to coated paper
	Doubling	see doubling
	Smearing	see smearing
	Scumming	see scumming

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Interference	Cause	Remedy
Piling -- Ink (ink builds up on plate or blanket) Most frequently an effect of improper water balance	Ink too short and not water repellent	Run less water, adjust ink/water balance, make ink more stiff
	pH value or conductivity of fountain solution is wrong	check and correct pH value and conductivity of fountain solution
	Ink rollers set wrong causing heat build-up	check roller settings and correct to minimum
Piling -- Paper (paper fibers or paper coating pile on blanket)	Blanket tacky	change blanket if necessary change to a different blanket type
	Low pressure between blanket and impression cylinder	check blanket packing, check and correct blanket to impression squeeze
	Poor paper quality	Change paper/substrate or reduce tack of ink, run more ink, wash blanket more frequently with water and cleaning solvents
	Ink too high in tack	Change paper/substrate or reduce tack of ink, run more ink, wash blanket more frequently with water and cleaning solvents
	Too less water	Run more water
Smearing (ink build-up in non-printing areas)	Poor water supply, too less water	check water supply and run more water
	Wrong adjustment of dampening rollers	check positioning, ease or tighten pressure
	Water evaporates on plate surface due to high temperatures	check roller settings, pressure between blanket and plate, bearer pressure and correct to avoid heat build-up
	Ink build-up on Distributor or Fountain rollers	clean rollers with respective solvents
	Too short or too much ink	run stronger ink or add additives, run less ink
	Worn or dirty dampening cloths	wash or replace dampening cloths

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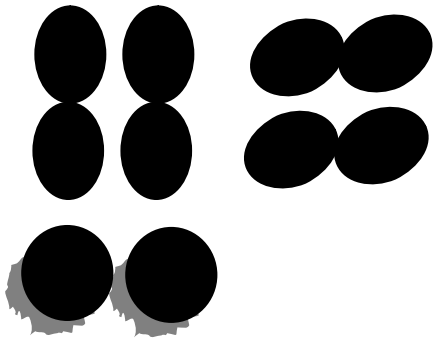
Interference	Cause	Remedy
Scumming (fogging in non-printing areas) 	Wrong ink/water balance	correct ink/water balance, run less ink
	wrong pH value of the water/fountain solution	pH value too high, plate gets greasy and gets water repellent. Correct pH value by additives
	Positioning of ink rollers too tight or too loose	correct roller positioning (too loose demands more ink, too tight causes throwing up of rollers)
	Water evaporates on plate surface due to high temperatures	check roller settings, pressure between blanket and plate, bearer pressure and correct to avoid heat build-up
	Acid or alkaline Paper changes pHvalue of water	Check pH value of paper and adjust pH value of the water accordingly (the more acid the paper the less acid the water)
	Plate poorly desensitised	Correct plate
	Ink emulsified, greasy	ink loses its water repellent characteristics and merges with the water causing fooging on plate, less water, add ink-additives
Doubling/Slurring (Image dots elongated or shadowed) 	Wrong water/ink balance	Run less ink, correct water/ink balance
	Rolling problem, too high or low plate and blanket packing	Rolling humps create doubling in direction of the gripper edge or the back part of the sheet, correct packing
	Loose blanket	Retighten the blanket according to press and blanket manufacturers specifications, use a maintained torque wrench
	Wrong direction of the blanket	Replace the blanket
	Blanket too long and/or not square	since the blanket is too long it is impossible to tighten it. Shorten blanket or replace blanket
	Loose clamping bars	verify proper fixing of clamping bars, ensure that the holes are punched to the exact position and are right-angled
	Loose Gripper	correct gripper to 0.2mm pre-tension and 30g/m2
	Wavy or tight paper edges	change paper stock

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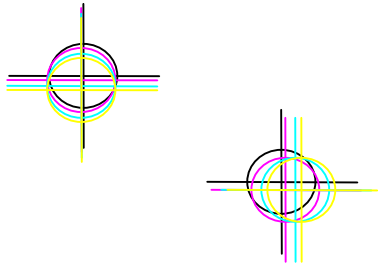
Interference	Cause	Remedy
Bar marking (horizontal streaks of heavier ink) 	Loose blanket	Tighten blanket after checking for wrinkles and or creeped packing sheet
Registration -- Circumfrential (colors not registered in ed direction of paper feed) **Registration -- Lateral** (colors do not register across sheet or web at 90 	Loose blanket	Tighten blanket after checking for wrinkles and or creeped packing sheet
	Blanket packing too much and/or too soft	vary softness of packing by mixing calibrated papers and calibrated carton, the more carton the harder the packing
	Blanket not square, wrong direction of blanket	Replace the blanket
	Wrong direction of the paper/substrate	change direction of stock or if not possible change stock
	Unstable stock	Paper characteristics not suitable for the job, maybe too thin paper which can't take the forces created by the blanket
	Excess water absorption by the paper	Run minimum of water to avoid paper from changing dimensions
	Rolling problem, improper packing from one unit to the next	correct packing of plate and/or blanket cylinder

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Interference	Cause	Remedy
Plate Blinding (loss of image from plate so it will not transfer image) 	Excess plate to blanket squeeze	Adjust plate to blanket squeeze to a measured .004 to .005. If blanket old and hard to the touch, try a new blanket.
	Blanket surface too hard	
	Improper form roller settings	check and correct roller settings, less pressure
	Bad or improperly made plate	
	Improper pH	Water too acid
	Insufficiently grinded ink (mechanical abrasion)	Use of a new ink batch
Paper Edge Cutting (paper edge is cutting blanket surface	Sharp edges of paper stock cutting blanket surface due to rough trim	Use a compressible blanket. Compressible blankets have greater packing latitude
	coating accumulation	If from piling, clean blanket more often,Change packing size so it is smaller than sheet size to lessen pressure at stock edges
	excess nip pressure	Use minimum back cylinder pressure
Embossed Blanket (previous job shows in print) **Ghosting** (sim. to Embossing, ghost of image appears in print)	Blanket swollen due to excessive pressure	Check blanket thickness and packing. Allow time for setting or replace blanket
	Very high ink tack	Reduce tack of ink, run more ink with minimum of water or talk to ink manufacturer about more suitable inks for press and job
	Lack of cleaning with proper blanket wash	Use quality blanket wash and clean blankets on a regular basis
	Solvents in ink may affect blanket (UV inks for example)	UV inks and washes can often swell blankets. If using UV ink, try a UV compatible blanket
	Low inking of rollers	check roller settings and correct it

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Paper does not release evenly (release issues seen as wavy printed sheets; poor sheet release may be audible during press run)	Excessive nip pressure	Insure blanket packing and impression settings are correct
	High tack of inks	Reduce tack of ink or talk to ink manufacturer about more suitable inks for press and job
	Tacky blanket	Blanket got tacky due to excessive use of harsh solvents or rejuvenators, ensure use of proper washing solvents and regular cleaning of blanket
	Dry ink on blanket	Ink was able to dry on the blanket surface due to idle running of the press, try to clean the blanket by hand wash and use proper washes
Pinholes in Blanket (small holes in blanket surface cause holes in print)	Blanket defect, particles coming out of blanket surface	Make sure holes in surface rubber rather than a hickey on blanket or plate surface. Replace blanket and save for evaluation and replacement by manufacturer.
Streaking (horizontal streaks in print, most noticeable in halftones)	Press condition known as gear streaks, can be made worse by excess bearer pressure or plate to blanket squeeze, ink form rolls set wrong or too hard.	Older or worn press gears can cause streaking. Compressible blankets can help minimize this. Other factors can include blanket or plate overpacked. Insure proper nip pressure between plate and blanket. Check bearer pressures...adjust. Adjust form rollers,
Loss of print at gap (cannot print full image area typically on a web press)	Blanket over-torqued, packing incorrect, Packing slipped. Press out of phase (timing issue).	Insure proper packing of blanket and use torque wrench to tighten to press manufacturer specs. Check torque wrenches for accuracy. Some print length problems are due to cylinders being out of phase. check cylinder timing to print length.
Loss of Print -- Continual Need to Repack (loss of print sharpness in overall print)	Probably caused by blanket sinking or elongating under pressure Bearers heating up can cause loss of pressure often incorrectly blamed on the blanket.	Be sure blanket installed so fabric stripe goes around the cylinder. Use a torque wrench so blanket is not overtightened. Clean bearers and perhaps change bearer wipes. If problem persists, change blanket and/or blanket brand. Blanket is defective.